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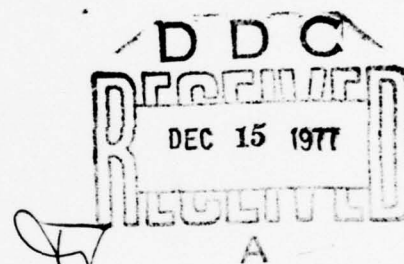
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RADIOBIOLOGY

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NOVEMBER 1977



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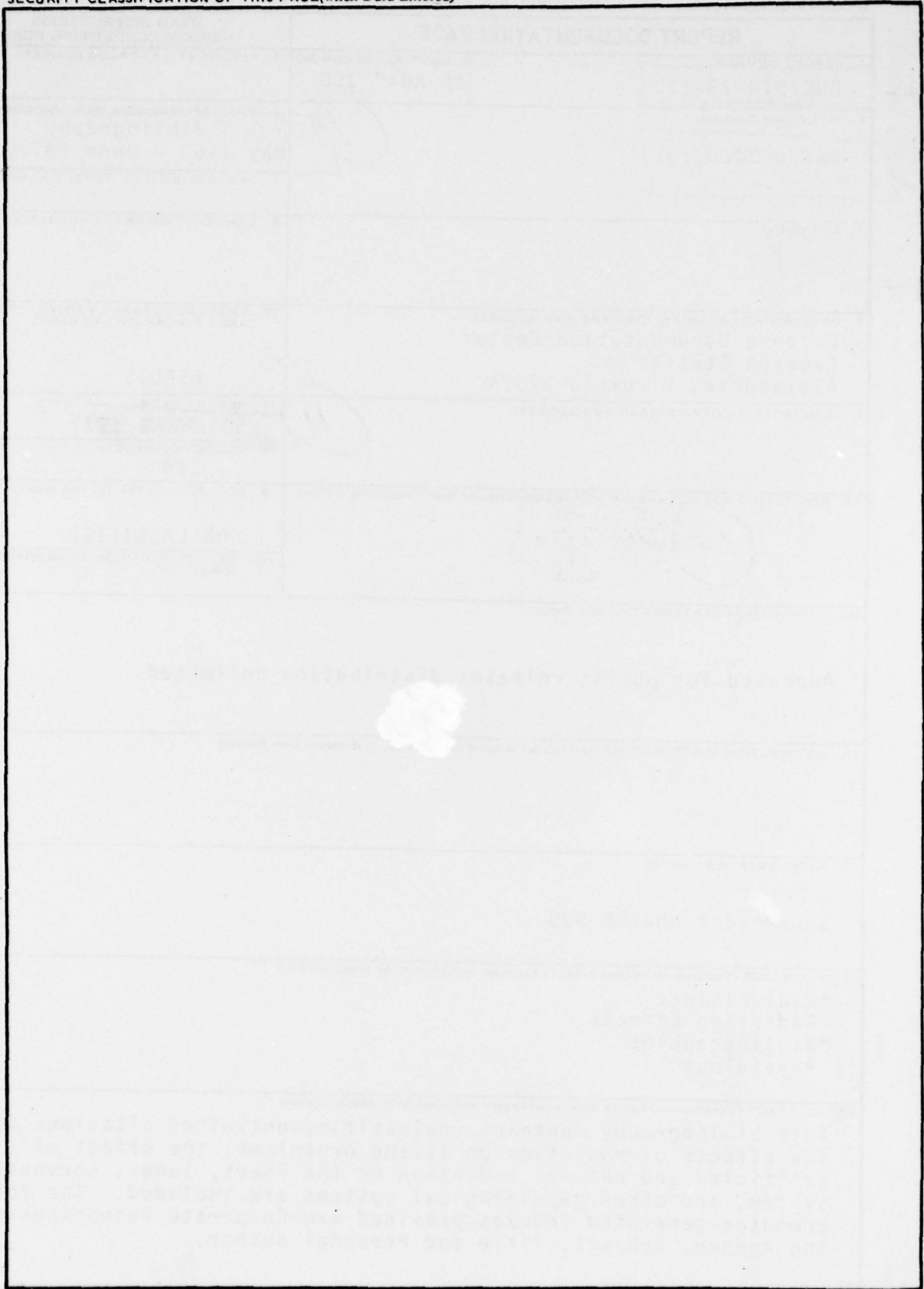
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F O R E W O R D

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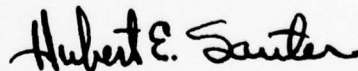
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This report supersedes Defense Documentation Center report bibliography on *Radiobiology*, AD-725 980, DDC-TAS-71-36, dated July 1971.

Individual entries are arranged in AD number sequence under the heading bibliographic references. Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.

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C O N T E N T S

	<u>Page</u>
FOREWORD	iii
AD BIBLIOGRAPHIC REFERENCES	1
INDEXES	
CORPORATE AUTHOR-MONITORING AGENCY. .	0-1
SUBJECT	D-1
TITLE	T-1
PERSONAL AUTHOR	P-1

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 69 763

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

APPLICATIONS OF INTERMITTENT RADIATION THEORY TO
CONSTANT DOSE VARIABLE RADIATION TIME PROBLEMS IN
BIOLOGICAL SYSTEMS

(U)

AUG 55 23P
REPT. NO. USAMRL-207
PROJ: DA-65908014

MICHIE, RICHARD W.; KROHN, LAWRENCE H.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, DOSE RATE, MATHEMATICAL
ANALYSIS, RADIATION EFFECTS, THEORY

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 149 023

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

A HIGH LEVEL COBALT 60 IRRADIATION FACILITY FOR
RADIOBIOLOGICAL RESEARCH

(U)

DEC 57 20P

KEREIAKES, JAMES G.; GINSBURG, JACK M.;

KREBS, ADOLPH T.;

REPT. NO. USAMRL-313

PROJ: DA-65908014

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, COBALT, GAMMA RAYS,
RADIOACTIVITY, SOURCES, TEST FACILITIES

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 265 378

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

PULSED IRRADIATION TECHNIQUES (SINGLE-PULSED, MULTI-PULSED, ULTRA-PULSED) AS A NEW APPROACH TO RADIOBIOLOGICAL PROBLEMS (U)

SEP 61 46P KREBS, A.T.;

REPT. NO. USAMRL-502

UNCLASSIFIED REPORT

DESCRIPTORS: *IONIZATION, *RADIATION EFFECTS, *RADIOBIOLOGY, *RADIOCHEMISTRY, DOSIMETERS, ELECTRON COUNTERS, INSTRUMENTATION, INTENSITY, ION BEAMS, MATHEMATICAL ANALYSIS, MEASUREMENT, NEUTRONS, TEST METHODS, TIME, X RAYS (U)
IDENTIFIERS: ELECTRON COUNTERS (M)

EXPERIMENTS AT DIFFERENT LABORATORIES, INCLUDING USAMRL, HAVE DEMONSTRATED THE EXISTENCE OF NEW EFFECTS IN PULSED IRRADIATION STUDIES AND HAVE PROVEN A PREVIOUSLY MADE PREDICTION BY MICHIE AND KROHN ON THE LOWER EFFICIENCY OF SINGLE HIGH INTENSITY PULSES IN COMPARISON TO CONVENTIONAL APPLICATION OF THE SAME TOTAL DOSE IN CONSTANT DOSE-VARIABLE RADIATION TIME EXPERIMENTS. THE APPLICATION OF PULSE TECHNIQUES IN RADIATION CHEMISTRY HAS LED TO DETAILED INFORMATION ON RADICAL FORMATION, CHAIN REACTIONS, AND LIFETIME OF THE DIFFERENT INTERMEDIATES. THE AVAILABLE RADIOBIOLOGICAL INFORMATION MANIFESTS THE IMPORTANCE OF PULSE-TECHNIQUES IN THE ENDEAVOR TO GET AN INSIGHT INTO THE BASIC MECHANISMS OF THE RADIATION-EFFECT AND TO MEASURE THE LIFETIME OF RADIATION PRODUCED FREE RADICALS AND INTERMEDIATES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 275 973

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE SEROLOGICAL SPECIFICITY OF RADIATION ALTERED
HUMAN SERUM GAMMA GLOBULIN

(U)

MAR 62 14P LUZZIO, ANTHONY J.;
REPT. NO. USAMRL-532
PROJ: DA-6-X-6414001

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, ANTIGENS + ANTIBODIES, BLOOD
PROTEINS, BLOOD SERUM, BOVINES, DETECTION, DOSAGE,
IMMUNOLOGY, HUMANS, RADIATION EFFECTS, X RAYS (U)

HUMAN SERUM GAMMA GLOBULIN AFTER INTENSE IN VITRO
X-IRRADIATION WAS USED AS AN ANTIGEN TO OBTAIN
ANTISERUMS IN GOATS. IT WAS FOUND TO BE DISTINCT
IMMUNOLOGICALLY FROM NON-IRRADIATED OR HEATED HUMAN
SERUM GAMMA GLOBULIN BY QUANTITATIVE PRECIPITIN
TESTS AND POSSESSED A SLOW MOVING COMPONENT AS
DETERMINED BY PAPER STRIP ELECTROPHORESIS. SIMILAR
ANTIGENS WERE PRODUCED BY IRRADIATING HUMAN SERUM IN
VITRO WITH LOW DOSES. PRELIMINARY EVIDENCE POINTS
TO THE POSSIBILITY OF DETECTING IRRADIATION-ALTERED
PROTEINS IN THE IRRADIATED PATIENT BY QUANTITATIVE
IMMUNOLOGICAL METHODS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 283 327

TEXAS WOMAN'S UNIV DENTON

A STUDY OF BONE CHANGES IN ALBINO RATS SUBJECTED TO
LOW INTENSITY COBALT-60 GAMMA RADIATION (U)

AUG 62 1V MACK, PAULINE BEERY; VOSE, GEORGE P.;
BROWN, SIDNEY O.;
CONTRACT: DA49 007MD956

UNCLASSIFIED REPORT

DESCRIPTORS: *BONES, *GAMMA RAYS, *RADIATION EFFECTS,
*RADIOBIOLOGY, *RADIOGRAPHY, GROWTH(PHYSIOLOGY),
LABORATORY ANIMALS, RADIOACTIVE ISOTOPES, VITAMIN A (U)

YOUNG ADULT MALE ALBINO RATS RECEIVED 50 R/DAY OF
CO-60 GAMMA RADIATION FOR 91 DAYS WITH RESULTS
COMPARED WITH NON-IRRADIATED CONTROLS. THE LATTER
SURPASSED THE IRRADIATED ANIMALS IN: INCREASE IN BODY
WEIGHT; SKELETAL GROWTH; RATE OF FRACTURE HEALING;
AND BONE STRENGTH. A MACROFRACTIONATED STUDY WAS
CONDUCTED WITH (A) ONE GROUP OF YOUNG ADULT MALE
ALBINO RATS WHICH RECEIVED 50 R/DAY OF C -60 GAMMA
RADIATION CONTINUOUSLY FOR 77 DAYS; (B) ONE
GROUP WITH ALTERNATING 7-DAY RADIATION AND REST
PERIODS FOR THE SAME LENGTH OF TIME; AND (C) ONE
GROUP RECEIVING NO RADIATION. THE FRACTIONATED
RADIATION PRODUCED LESS DELETERIOUS EFFECTS ON
CERTAIN ASPECTS OF SKELETAL STATUS THAN THE
CONTINUOUS RADIATION EXPOSURE; AND THE NON-IRRADIATED
CONTROLS SURPASSED THE TWO IRRADIATED GROUPS.
QUANTITATIVE MICRORADIOGRAPHIC TECHNIQUES WERE
APPLIED TO A STUDY OF THE MECHANISM OF THE HEALING
OF BONE FRACTURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 284 931

UPPSALA UNIV (SWEDEN)

HISTOLOGY OF THE SURGICAL RADIOLESION IN THE HUMAN
BRAIN AS PRODUCED BY HIGH ENERGY PROTONS (U)

AUG 62 1V MAIR, WILLIAM; REXED, BROR; SOURANDER,
PATRICK;
REPT. NO. TN4
CONTRACT: AF61 052 183
MONITOR: AFOSR 3480

UNCLASSIFIED REPORT

DESCRIPTORS: *BRAIN, *PROTONS, *RADIATION INJURIES,
*RADIOBIOLOGY, HISTOLOGY, NERVOUS SYSTEM, PAIN,
PATHOLOGY, RADIATION EFFECTS (U)
IDENTIFIERS: BRAIN INJURIES, RADIOLESIONS (M)

CHANGES IN THE MID BRAIN OF A MAN FOLLOWING
IRRADIATION WERE STUDIED ON ONE SIDE OF THE
SPINOTHALAMIC TRACT REGION BY HIGH ENERGY PROTONS TO
RELIEVE PAIN. THE MAN WAS 59 AND SUFFERED FROM
INTRACTABLE PAIN DUE TO CANCER OF THE LUNG WITH
SPREAD TO THE AXILLA AND THE SUPRACLAVICULAR REGION.
THE IRRADIATED REGION WAS SHARPLY DEMARCATED BEING
OVOID IN SHAPE WITH A CRENATED BORDER. DESTRUCTION
OF MYELIN SHEATHS, AXONS, ASTROCYTES AND
OLIGODENDROGLIA OCCURRED IN THE IRRADIATED REGION AND
SOME TINY PERIVASCULAR HAEMORRHAGES WERE PRESENT.
NUCLEAR DEBRIS AND COLLECTIONS OF MACROPHAGES WERE
FOUND AT THE EDGE OF THE NECROSIS. LITTLE
PROLIFERATION OF ASTROCYTES WAS SEEN 9 WEEKS AFTER
IRRADIATION. THE CHANGES WERE EXACTLY SIMILAR TO
THOSE SEEN IN GOATS 7 AND 4 WEEKS AFTER IRRADIATION
WITH THE SAME DOSE. TINY, DISCRETE, ROUNDED, ZONES
OF NECROSIS WERE SEEN IN MAN JUST ROSTRAL TO THE
CONFLUENT NECROSIS. THEY ARE PRESUMABLY THE RESULT
OF INTERSECTING BEAMS AS THEY PASS TO THE CENTER OF
IRRADIATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 285 094

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE RADIOBIOLOGY OF TEETH

(U)

AUG 62 1V KIMELDORF, D.J.; JONES, D.C.; CASTANERA,
T.J.;
REPT. NO. TR579

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *TEETH, CELLS (BIOLOGY),
RADIATION EFFECTS, X RAYS

(U)

THE LITERATURE REGARDING RADIATION EFFECTS UPON TEETH WAS SUMMARIZED AND REVIEWED. RADIATION EFFECTS UPON TEETH WERE OBSERVED IN A VARIETY OF SPECIES INCLUDING MAN. WHERE SUFFICIENT DATA ARE AVAILABLE TO FORM A JUDGMENT IT APPEARS THAT THE PATTERN OF ALTERATION IS SIMILAR AMONG SPECIES. THE EFFECTS ARE DEPENDENT UPON EXPOSURE FACTORS AND THE STAGE OF TOOTH DEVELOPMENT AT THE TIME OF IRRADIATION. IF THE DOSE IS MASSIVE, THE EFFECTS MAY ALSO INVOLVE DAMAGE TO THE TOOTH SUPPORTIVE STRUCTURES. RADIATION ALTERS OR DESTROYS THOSE ODONTOGENIC CELLS WHICH ARE ACTIVELY PROLIFERATING AND DIFFERENTIATING AT THE TIME OF EXPOSURE. IF IRRADIATION OCCURS BEFORE THE FORMATION OF HARD TISSUES, IT MAY DESTROY THE TOOTH BUD. RADIATION AT A LATER STAGE IN DEVELOPMENT MAY ALTER DIFFERENTIATION OR ARREST FURTHER GROWTH. THE SEVERITY OF THE EFFECT IS DEPENDENT UPON THE RADIATION DOSE. MATURE TOOTH STRUCTURES ARE AFFECTED PRIMARILY BY RELATIVELY LARGE DOSES ALTHOUGH HISTOLOGIC EVIDENCE OF DAMAGE IN GROWING TEETH OF RODENTS MAY BE DETECTED WITH 25 R OF X RAYS. THE PATTERNS OF INJURY AND REGENERATION FOR THE VARIOUS TISSUES OF THE TOOTH ARE PRESENTED. IN TERMS OF RADIOBIOLOGICAL MECHANISMS IT APPEARS THAT DIRECT RADIATION INJURY TO TEETH CONSISTS PRIMARILY OF AN INTERFERENCE WITH MITOSIS OF PROLIFERATIVE TISSUES AND THE IMPAIRMENT OF METABOLIC PROCESSES IN DIFFERENTIATING CELLS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 294 513

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RADIOBIOLOGY (SELECTED ARTICLES)

(U)

DEC 62 1V

REPT. NO. TT 62 1316

UNCLASSIFIED REPORT

DESCRIPTORS: *BRAIN, *RADIATION INJURIES, *RADIOBIOLOGY,
CEREBRAL CORTEX, ELECTRIC POTENTIAL, IMMUNOLOGY,
METABOLISM, PATHOLOGY, THALAMUS (U)

CONTENTS: DESTRUCTION OF THE RECTICULAR STRUCTURE
IN THE MESENCEPHALON AND HYPOTHALAMUS AND ITS
EFFECT ON BIOELECTRICAL REACTIONS OF THE CORTEX IN
ACUTE RADIATION SICKNESS ACETYLCHOLINE METABOLISM
IN THE THALAMIC REGION OF THE BRAINS OF DOGS WHICH
HAVE UNDERGONE ACUTE RADIATION SICKNESS THE
VALUE OF IMMUNOLOGICAL INVESTIGATIONS IN STUDYING
THE PATHOGENESIS OF ACUTE RADIATION SICKNESS (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 295 807

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RADIOBIOLOGY (SELECTED CHAPTERS)

(U)

JAN 63 1V GROZDENSKIY, DAVID EMMANUILOVICH;
REPT. NO. TT 62 355

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIATION INJURIES,
*RADIOBIOLOGY, *RADIOCHEMISTRY, ANIMALS, CANCER, CELLS
(BIOLOGY), EMBRYOS, LEUKEMIA, HUMANS, MEDICINE,
METABOLISM, OXYGEN, PLANTS (BOTANY), RADIOACTIVITY,
RADIATION DOSAGE, THERAPY, WATER (U)

TRANSLATION OF SELECTED USSR ARTICLES ON RADIOBIOLOGY:
CHEMICAL EFFECT OF RADIATION; RADIATION EFFECT ON CELLS
AND THE WHOLE ORGANISM; CHEMICAL PROTECTION AND
TREATMENT.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 296 447

EMORY UNIV ATLANTA GA

ION EFFECTS IN X-RAY DEPOLARIZATION OF MUSCLE
MEMBRANE

(U)

DEC 62 IV PORTELA, ADOLFO; PEREZ, JUAN C.;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *MUSCLES, *RADIATION EFFECTS,
*RADIOBIOLOGY, AMPHIBIANS, CALCIUM COMPOUNDS, ELECTRIC
POTENTIAL, ELECTROLYTES (PHYSIOLOGY), IONS, MEMBRANES
(BIOLOGY), PHYSIOLOGY, POTASSIUM COMPOUNDS, SODIUM
COMPOUNDS

(U)

IRRADIATION OF FROG SARTORIUS MUSCLES WITH 100 KP
OF X-RAYS RESULTS IN A RELATIVE DECREASE IN RESTING
MEMBRANE POTENTIAL WHICH IS DEPENDENT ON EXTERNAL
SODIUM CONCENTRATION, BUT NOT ON POTASSIUM
CONCENTRATION PROVIDED THAT THE LATTER EXCEEDS 1.0
MM. IN ZERO POTASSIUM SOLUTIONS, THE POTENTIAL
DECREASES MORE, AND CONTINUES TO FALL AFTER
IRRADIATION. NEITHER IRRADIATION NOR STIMULATION
ALTERS THE RATE AT WHICH CA45 IS LOST FROM
PREVIOUSLY LOADED MUSCLE FIBERS. APPARENTLY
IRRADIATION DAMAGE TO THE MUSCLE CELL MEMBRANE
RESULTS IN INCREASED PERMEABILITY TO SODIUM, BUT NOT
VIA THE RELEASE OF CALCIUM IONS. SODIUM EXTRUSION
MECHANISMS ARE ALTERED BY IRRADIATION SO AS TO
REQUIRE AN EXTERNAL POTASSIUM CONCENTRATION ABOVE
1.0MM TO MATCH THE INCREASE OF NA INFLUX.
PERMEABILITY TO POTASSIUM DOES NOT APPEAR TO BE
ALTERED BY IRRADIATION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 296 448

EMORY UNIV ATLANTA GA

CESIUM-SODIUM INTERACTIONS ON X-RAY DEPOLARIZATION OF
MUSCLE FIBERS (U)

DEC 62 1V PORTELA, ADOLFO; PEREZ, JUAN C.;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *CESIUM COMPOUNDS, *MUSCLES, *RADIATION
EFFECTS, *RADIOBIOLOGY, AMPHIBIANS, ELECTRIC POTENTIAL,
ELECTROLYTES (PHYSIOLOGY), IONS, MEMBRANES (BIOLOGY),
PHYSIOLOGY, POTASSIUM COMPOUNDS, SODIUM COMPOUNDS (U)

CESIUM IONS IN BATHING FLUID PRODUCE A
DEPOLARIZATION OF FROG SARTORIUS MUSCLE FIBERS
INDEPENDENT OF THE DEPOLARIZATION PRODUCED BY
IRRADIATION. THE FRACTIONAL DEPOLARIZATION PRODUCED
BY X-RAYS IS INDEPENDENT OF EXTERNAL CESIUM
CONCENTRATION, BUT PROPORTIONAL TO EXTERNAL SODIUM
CONCENTRATION, AND IS EXPLAINED AS THE RESULT OF AN
INCREASED SODIUM ION PERMEABILITY. CESIUM
DEPOLARIZATION (20MMCS) IN NON-IRRADIATED
FIBERS INCREASES WITH DECREASING SODIUM
CONCENTRATION, INDICATING A SPECIFIC SODIUM-CESIUM
INTERACTION IN THE MEMBRANE. A SIMPLE
CONCENTRATION-CELL POTENTIAL EXPLANATION FOR THE
CESIUM EFFECTS IS NOT YET ADEQUATE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 296 449

EMORY UNIV ATLANTA GA

RADIATION DAMAGE IN MUSCLE CELL MEMBRANES AND
REGULATION OF CELL METABOLISM

(U)

DEC 62 1V PORTELA, ADOLFO; PEREZ, JUAN CARLOS;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *METABOLISM, *MUSCLES, *RADIATION EFFECTS,
*RADIOBIOLOGY, ADENOSINE PHOSPHATES, AMPHIBIANS,
BIOCHEMISTRY, ELECTROLYTES (PHYSIOLOGY), ENERGY,
ENZYMES, IONS, MEMBRANES (BIOLOGY), MICROSOMES,
POTASSIUM COMPOUNDS, RADAR, RELAXATION (PHYSIOLOGY),
SODIUM COMPOUNDS

(U)

EFFECTS OF 100,000R DOSES ON STRIATED FROG MUSCLES
INCLUDE PROLONGED RELAXATION TIME, MORE RAPID
FATIGUE, AND DECREASED ATP AND GLYCOGEN CONTENT,
BUT INCREASED POTASSIUM AND SODIUM EFFLUXES, SODIUM
INFLUX AND OXYGEN CONSUMPTION, COMPARED WITH NON-
IRRADIATED CONTROLS. TWITCH LATENCY AND RISE TIME
ARE NOT CHANGED. MAGNESIUM-ACTIVATED ATPASE
ACTIVITY OF HOMOGENATES OR MITOCHONDRIAL SUSPENSIONS
DECREASES IMMEDIATELY AFTER IRRADIATION, BUT
INCREASES WITH TIME MORE RAPIDLY THAN IN CONTROLS.
BIOCHEMICAL FINDINGS SUGGEST UNCOUPLING OF
OXIDATIVE PHOSPHORYLATION; ION FLUX DATA SUGGEST
INCREASED MEMBRANE PERMEABILITY. THIS LEADS TO THE
HYPOTHESIS THAT IRRADIATION RESULTS IN SARCOPLASMA
MEMBRANE DAMAGE, THEREBY INCREASING ION
PERMEABILITIES, AND MITOCHONDRIAL STRUCTURE DAMAGE,
THEREBY INTERFERING WITH OXIDATIVE PHOSPHORYLATION
AND REDUCING ATP PRODUCTION. A 90% DECREASE IN
MEMBRANE POTENTIAL DURING IRRADIATION HAS ALREADY
BEEN REPORTED. THE OBSERVED INCREASES IN NA AND
K FLUXES AFTER IRRADIATION EXPLAIN THESE FINDINGS.
AT THESE RADIATION LEVELS, OUR DATA DO NOT REQUIRE
ANY HYPOTHESIS OF EARLY DIRECT DAMAGE TO THE
CONTRACTILE MECHANISM PER SE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 298 314

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

BIOCHEMICAL MECHANISMS OF RADIATION SICKNESS (AND)
THE PROBLEM OF SCIENTIFICALLY SUBSTANTIATING THE
DEGREE OF EPIDEMIOLOGICAL EFFECTIVENESS OF VARIOUS
VACCINES

(U)

DEC 62 1V
REPT. NO. 16772

RODIONOV, V.M.; BAROYAN, O.V.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, BIOCHEMISTRY, COMMUNICABLE
DISEASES, EFFECTIVENESS, EPIDEMIOLOGY (U)

BIOCHEMICAL MECHANISMS OF RADIATION SICKNESS (AND) THE
PROBLEM OF SCIENTIFICALLY SUBSTANTIATING THE
DEGREE OF EPIDEMIOLOGICAL EFFECTIVENESS OF VARIOUS VACCINES.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 290 499

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

CHARACTERISTICS OF PHYSIOLOGICAL AND BIOCHEMICAL
SHIFTS ASSOCIATED WITH THE PROTRACTED ACTION OF SMALL
DOSES OF C060 GAMMA-RAYS ON ORGANISMS (U)

DEC 62 1V ZLATIN, R.S.; MAKARCHENKO, O.F.;
SIROTINA, M.F.;

UNCLASSIFIED REPORT

DESCRIPTORS: *GAMMA RAYS, *RADIOBIOLOGY, BIOCHEMISTRY,
BLOOD, COBALT, DOGS, HEMATOLOGY, NEUROLOGY, PHYSIOLOG(U)
IDENTIFIERS: STEP (M)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 299 522

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

IMMUNOLOGICAL PROPERTIES OF DENATURATED SERUM
PROTEINS IN RABBITS SUBJECTED TO IONIZING
RADIATION

(U)

DEC 62 1V PROKOPENKO, L.G.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, BLOOD, BLOOD PROTEINS, BLOOD
SERUM, DOSE RATE, IMMUNOLOGY, LABORATORY ANIMALS,
PATHOLOGY, RABBITS, SERUM ALBUMIN
IDENTIFIERS: STEP

(U)

(M)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 299 598

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

CHAIN REACTIONS IN THE DAMAGE OF CELLS BY IONIZING
RADIATION (U)

DEC 60 1V TARUSOV, B.N.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, LETHAL DOSAGE, MITOSIS,
OXYGEN CONSUMPTION, RADAR TARGET POSITION SIMULATORS,
RADIATION DOSAGE (U)
IDENTIFIERS: STEP (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 299 746

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

INFLUENCE OF X-RAY IRRADIATION ON THE METABOLISM OF
LIPIDES IN THE LIVER OF A DOG (U)

DEC 62 1V POLOSUKHINA, T.Y.; VALITOVA, M.S.;

UNCLASSIFIED REPORT

DESCRIPTORS: *LIPIDS, *RADIOBIOLOGY, BIOCHEMISTRY, BLOOD
SERUM, CHOLESTEROL, DOGS, GLYCOGEN, HEMATOLOGY, LIVER,
METABOLISM, RADIATION DOSAGE (U)
IDENTIFIERS: STEP (M)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 203

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

TRAINING OF MEDICAL RADIOLOGY PERSONNEL (U)

NOV 62 1V KOZLOVA, A.V.;
REPT. NO. 16320

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL PERSONNEL, *RADIOBIOLOGY,
*TRAINING, DIAGNOSIS(MEDICINE), RADIOACTIVITY, THERAP(U)

TRANSLATION OF FOREIGN RESEARCH; TRAINING OF MEDICAL
RADIOLOGY PERSONNEL.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 217

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

REPORTS OF THE ACADEMY OF SCIENCES USSR, 1962, VOL.
145, NO. 1: SELECTED ARTICLES (U)

NOV 62 1V
REPT. NO. 16333

UNCLASSIFIED REPORT

DESCRIPTORS: *PHOTOSYNTHESIS, *RADIOBIOLOGY,
*RADIOPROTECTIVE AGENTS, COUNTERMEASURES, DRUGS,
FLUORESCENCE, MUSCLES, OPTICS, OXYGEN, PHYSIOLOGY,
RADIATION INJURIES, RESPIRATION, SHOCK (PATHOLOGY),
SKELETON, TEMPERATURE, TISSUES (BIOLOGY) (U)

TRANSLATION OF FOREIGN RESEARCH; REPORTS OF THE
ACADEMY OF SCIENCES USSR, 1962, VOL. 145, NO. 1:
SELECTED ARTICLES.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 405

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 8: (SELECTED)
ARTICLES

(U)

NOV 62 1V
REPT. NO. 16242

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL RESEARCH, *RADIOBIOLOGY, BIOLOGY,
ELECTRONICS, IMMUNITY, IONIZATION, MEDICINE,
MUSCULOSKELETAL SYSTEM, PRIMATES, RADIATION EFFECTS,
SYMPOSIA

(U)

IDENTIFIERS: MEDICAL RADIOLOGY

(U)

TRANSLATION OF FOREIGN RESEARCH: MEDICAL RADIOLOGY.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 580

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

THE EFFECT OF CENTIMETER BAND RADIO WAVES ON THE
ABSORPTION OF AMINO ACIDS, CHLORIDES AND WATER IN THE
STOMACH AND INTESTINES (U)

DEC 62 1V FAYTEL, BERH, V. R. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, ABSORPTION, AMINO ACIDS,
CHLORIDES, DOGS, GASTROINTESTINAL SYSTEM, HIGH
FREQUENCY, INTESTINES, RADIO WAVES (U)
IDENTIFIERS: STEP (M)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 400 635

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

COMPARATIVE EFFECTS OF 50 KVP AND 250 KVP X RAYS ON
THE DOG (U)

JAN 63 1V BAUM, S.J.; ALPEN, E.L.;
REPT. NO. TR616

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION DOSAGE, BLOOD
COUNTS, BLOOD VOLUME, BONE MARROW, DOGS, HEMOPOIETIC
SYSTEM, INTEGUMENTARY SYSTEM, IRON, LABELED SUBSTANCES,
PATHOLOGY, PHYSIOLOGY, RADIATION MEASURING INSTRUMENTS,
RADIOACTIVE ISOTOPES, SCINTILLATION COUNTERS (U)
IDENTIFIERS: LET (M)

RESEARCH STUDY WAS MADE TO DEFINE PHYSICAL DOSE
DISTRIBUTION UNDER BOTH A UNIFORM AND A HIGHLY NON-UNIFORM
CONDITION AND TO OBSERVE AND CORRELATE THE FINDINGS WITH
PHYSICAL DOSE MEASUREMENT.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 401 027

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY
EXPOSURE

(U)

FEB 63 1V
REPT. NO. TR622

SMITH, J.C.; KIMELDORF, D.J.; HUNT, E.L.;

UNCLASSIFIED REPORT

DESCRIPTORS: *INSECTS, *RADIOBIOLOGY, BRAIN, FLIGHT,
INTENSITY, LEPIDOPTERA, MOTOR REACTIONS, RADIATION
EFFECTS, SPINAL CORD

(U)

RESEARCH ON MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY
EXPOSURE. BURST OF X-RAYS ELICITED FLIGHT ACTIVITY IN MOTH
WHEN PLACED IN A DARKENED X-RAY EXPOSURE ROOM. WING
BEAT ACTIVITY RECORDED AS AN INDEX OF THIS BEHAVIOR.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 402 519

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

RADIOBIOLOGY: THE RADIATION INJURY MECHANISM IN
MOUSE OVARIES AND ELECTRICAL STIMULATION OF THE HEART
BY MEANS OF RADIOFREQUENCY IMPULSE TRANSMISSION, (U)

MAR 63 18P KASHCHENKO, L.A.; BABSKI, I.
E.D.;
REPT. NO. 18045

UNCLASSIFIED REPORT

AVAILABILITY: MICROFILM ONLY AFTER ORIGINAL COPIES
EXHAUSTED.

SUPPLEMENTARY NOTE: TRANS. OF AKADEMIYA NAUK SSSR.
DOKLADY, 1962, V. 147, NO. 1, P. 217-220 AND 255-258.
NOTICE: ALSO FROM OTS FOR \$.50 AS REPT. NO. 63
21290.

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION, MICE,
STIMULATION(PHYSIOLOGY), *HEART, RADIO, SEX GLANDS,
BIONICS. (U)

TRANSLATION OF FOREIGN RESEARCH; RADIATION INJURY
MECHANISM IN MOUSE OVARIES; ELECTRICAL STIMULATION OF THE
HEART BY RADIOFREQUENCY IMPULSE TRANSMISSION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 403 741

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICINE AND PHYSIOLOGY SELECTED ARTICLES. (U)

MAR 63 25P

REPT. NO. 18339.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF FIZIOLOGICHNYI ZHURNAL (USSR), 8:6, PP. 701-108, 815-817, 827-829, 1962. ALSO FROM OTS FOR \$.75 AS REPT. 63-21417.

DESCRIPTORS: *MEDICINE, *PHYSIOLOGY, UNIVERSI, MEDICAL RESEAPCH, MEDICAL PERSONNEL, RADIOACTIVE ISOTOPES, *PHOSPHORUS, *MUSCLES, FATIGUE (PHYSIOLOGY), *POTENTIOMETERS, *RADIO, METABOLISM, AGE FACTORS, *MEDICAL (U)

CONTENTS: THE ACADEMY OF SCIENCES UKRAINIAN SSR AND ITS ROLE IN THE FORMATION OF THE LEADING MEDICAL SCHOOLS, BY O. F. MAKARCHENKO AND K. F. DUPLENKO AGE PECULIARITIES OF RADIOACTIVE PHOSPHOROUS ASSIMILATION BY SKELETAL MUSCLES IN VARIOUS DEGREES OF FATIGUE, BY O. V. EPSHTEIN UTILIZING MULTICHANNEL ELECTRONIC POTENTIOMETERS FOR PHYSIOLOGICAL INVESTIGATIONS, BY V. YA. BEREZOVSKIY AND V. I. MIRUTENKO (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 405 421

JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 11:
(SELECTED) ARTICLES.

(U)

JAN 63 58P

REPT. NO. 17402

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MEDITSINSKAYA
RADIOLOGIYA (USSR) 1962, V. 7, NO. 11, P. 23-31, 39-53,
65-73, 83-85, 92-94. ALSO FROM OTS FOR \$1.50 AS REPT.
63 21030.

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION, PERSONNEL,
DIAGNOSIS(MEDICINE), RADIOACTIVE, DISEASES, IODINE,
*THYROID GLAND, POISONING, COUNTERMEASURES, *BLOOD,
PATHOLOGY, SKIN(ANATOMY), X-RAYS, DAMAGE, RADIATION
EFFECTS, *EYE, *BONE, TRANSPLANTATION, TISSUES
(BIOLOGY), SPLEEN, CONFERENCES, *RADIOPROTECTIVE DRUGS,
*RADIATION INJURIES.

(U)

CONTENTS: ORGANIZATION OF WORK AND NORMS FOR THE
WORK-LOAD OF PERSONNEL ENGAGED IN THE DIAGNOSIS AND
TREATMENT OF DISEASES OF THE THYROID GLAND BY
RADIOACTIVE IODINE, BY V. KH. FRENKEL, FIRST
AID IN RADIOACTIVE IODINE POISONING, BY V. P.
BORISOV CHANGES IN PERIPHERAL BLOOD DURING
RADIATION THERAPY, BY E. V. KARIBSKAYA AND T.
E. MATETSKAYA EARLY CHANGES IN THE SKIN
CHRONAXY AND VISUAL ANALYSORS IN PERSONS EXPOSED TO
A SINGLE LOCAL X-RAY TREATMENT, BY A. S.
EFIMOVA LUMINESCENT-MICROSCOPIC EVALUATION OF THE
BLOOD AND BONE MARROW DURING X-RAY IRRADIATION,
BY V. A. KOLPAKOV AND M. M. POPOV TREATMENT
OF RADIATION SICKNESS BY HOMOTRANS PLANTATION OF
FRESH AND PRESERVED SPLEEN, BY V. A. REVIS
EXPERIMENTAL EFFECT OF SEVERAL PHARMACOPEIAL
PREPARATIONS ON RADIATION SICKNESS, BY A. V.
SHUBINA SCIENTIFIC CONFERENCE ON RECOVERY
FROM RADIATION INJURIES, MAY 62, BY O. V.
POPOV

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 416 717

AEROSPACE MEDICAL DIV BROOKS AFB TEX

APPLICATION OF SEMICONDUCTOR RADIATION DETECTORS TO
RADIOLOGIC PROBLEMS. (U)

AUG 63 9P
MONITOR: SAM TDR-63-25

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEMICONDUCTOR DEVICES, RADIO),
(*RADIOBIOLOGY, SEMICONDUCTOR DE), DESIGN,
MANUFACTURING, MA, FEASIBILITY STUDIES, RADIATION MONI,
PROTONS, NEUTRONS. (U)

THE EXPERIMENTAL CHARACTERISTICS OF SEMICONDUCTOR
PARTICLE DETECTORS HAVE BEEN STUDIED EXTENSIVELY TO
DETERMINE RESPONSE, RESOLUTION, RISE TIME, STABILITY,
AND IRRADIATION EFFECTS. SURFACE BARRIER
DETECTORS, DIFFUSED P-N JUNCTION DETECTORS, AND
ION-DRIFTED P-I-N DETECTORS HAVE BEEN EXPOSED TO
MANY DIFFERENT ENERGIES OF PROTONS, ELECTRONS,
PHOTONS, AND NEUTRONS. THE CHARACTERISTICS OF THE
RESPONSE OF EACH TYPE OF DETECTOR TO EACH TYPE OF
IONIZING RADIATION HAVE BEEN DETERMINED AS A
FUNCTION OF GEOMETRY AND OPERATING CONDITIONS.
THIS BASIC INFORMATION CONCERNING THE DETECTORS IS
BEING USED TO SOLVE RADIOBIOLOGIC PROBLEMS IN THE
LABORATORY AND IN SPACE. THE APPLICATIONS INCLUDE
(1) PARTICLE IDENTIFICATION, (2) ENERGY
SPECTRUM MEASUREMENT, (3) ENERGY DEPOSITED IN THE
SILICON FROM THE IONIZING PARTICLE, (4)
TRANSLATION OF ENERGY ABSORBED IN SILICON TO ENERGY
ABSORBED IN TISSUE, I.E., DOSE MEASUREMENT, AND
(5) DEPTH DOSE MEASUREMENTS BY EMBEDDING
DETECTORS IN ANIMALS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 419 563

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

INDUCTION OF HOMOGRAFT TOLERANCE IN SUBLETHALLY X-IRRADIATED ADULT MICE, (U)

AUG 63 12P COLE, L. J. ; DAVIS, W. E. ;
REPT. NO. USNRDL-TR-668

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, IMMUNOLOGY), (*X-RAYS, TRANSPLANTATION), MICE, SPLEEN, WHOLE BODY IRRADIATION, BONE MARROW, PATHOLOGY, TOLERANCE (PHYSIOLOGY), SKIN (ANATOMY), LABORATORY ANIMALS (U)
IDENTIFIERS: HOMOGRAFTS, HYBRID (U)

AN ATTEMPT HAS BEEN MADE TO ACHIEVE HOMOGRAFT TOLERANCE IN SUBLETHALLY IRRADIATED ADULT MICE UNDER CONDITIONS WHICH AVOID SECONDARY DISEASE. ALLOGENEIC MICE WHICH SHARE THE SAME H-2 LOCUS, BUT DIFFER AT OTHER HISTOCOMPATIBILITY LOCI, HAVE NOW BEEN USED WITH SOME SUCCESS. A TOLERANT STATE HAS BEEN PRODUCED IN CBA (H-2K) MICE BY FIRST EXPOSING THEM TO SUBLETHAL X-RADIATION (500 RAD) OR URETHAN-TREATMENT COUPLED WITH IRRADIATION, AND THEN INJECTING C3H (H-2K) SPLEEN (18 X 10 TO THE 6TH POWER) AND/OR BONE MARROW (42 X 10 TO THE 6TH POWER) CELLS WITHIN 3 DAYS POST IRRADIATION. THESE MICE HAVE RETAINED SUBSEQUENT C3H SKIN HOMOGRAFTS (OVER 165 DAYS) BUT HAVE REJECTED BALB/C SKIN GRAFTS (H-2D) WITHIN 33 DAYS. ON THE OTHER HAND, IRRADIATED AND URETHAN-TREATED CONTROLS, UNINJECTED OR INJECTED WITH X-RAY INACTIVATED (2000 RAD IN VITRO) C3H CELLS, REJECTED BOTH C3H AND BALB/C HOMOGRAFTS BY 70 DAYS. SIMILAR RESULTS, ALTHOUGH LESS DEFINITIVE, HAVE BEEN OBTAINED USING C3H (HD2K) OR BALB/C (H-2D) AS THE RECIPIENT MICE AND CBA (H-2K) OR DBA/2 (H-2D) MICE RESPECTIVELY, FOR THE DONOR CELLS. SUCH PROCEDURES, HOWEVER, HAVE BEEN UNSUCCESSFUL IN PRODUCING HOMOGRAFT TOLERANCE BETWEEN DONOR AND HOST F1 HYBRID MICE WHICH HAVE ONE H-2 HISTOCOMPATIBILITY LOCUS IN COMMON BUT DIFFER AT THE OTHER. THE SIGNIFICANCE OF THESE RESULTS IS DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 421 070

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AROUSAL REACTIONS WITH A BRIEF PARTIAL-AND WHOLE-BODY
X-RAY EXPOSURE. (U)

SEP 63 15P HUNT, E. L. ; KIMELDORF, D. J.

REPT. NO. USNRDL-TR-670

PROJ: MR005.08

TASK: MR005.08.52

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*X RAYS, RATS), (*NERVOUS SYSTEM, RADIATION EFFECTS), (*RADIATION EFFECTS, NERVOUS SYSTEM), SENSITIVITY, DISTRIBUTION, VISION, LABORATORY ANIMALS, STIMULATION(PHYSIOLOGY), GANGLIA, PSYCHOLOGY, WHOLE BODY IRRADIATION, PARTIAL BODY IRRADIATION (U)

A STUDY WAS MADE TO DETERMINE THE SENSITIVITY OF THE MAMMALIAN NERVOUS SYSTEM TO NON-VISUAL STIMULATION WITH IONIZING RADIATION. BLINDED RATS WERE EXPOSED, WHILE ASLEEP, TO A ONE-SECOND BURST OF X RAYS AND MEASUREMENTS OF BEHAVIORAL AROUSAL AND HEART RATE WERE MADE TO INDICATE ACTIVATION OF THE CENTRAL NERVOUS SYSTEM. THE STIMULUS WAS IMMEDIATELY EFFECTIVE SINCE REACTION LATENCIES OF ONE SECOND OR LESS WERE FREQUENTLY RECORDED. THE RELATIVE INCIDENCE OF AROUSAL AND OF A HEART RATE REACTION, WAS FOUND TO BE RELATED TO THE RADIATION DOSE RATE OVER THE RANGE OF FROM 0.05 TO 3.2 R/SEC. THE THRESHOLD DOSE RATE WAS LESS THAN 0.05 R/SEC. TO TEST FOR REGIONAL DISTRIBUTION OF SENSITIVITY, ADDITIONAL BLINDED ANIMALS WERE EXPOSED TO A BURST OF X RAYS AT THE DOSE RATE OF 1.0 R/SEC. WITH EXPOSURE LIMITED TO THE HEAD REGION OR TO THE REST OF THE BODY. THE RESULTS OF THE STUDY ARE CONSISTENT WITH THE POSTULATION THAT GANGLIONIC TISSUE IS DIRECTLY SENSITIVE TO IONIZING RADIATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 430 440

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PLUTONIUM-239. ITS DISTRIBUTION, BIOLOGICAL EFFECT
AND ACCELERATED ELIMINATION. (PLUTONIY 239
RASPREDELENIYE, BIOLOGICHESKOYE DEYSTVIYE, USKORENIYE
VYVEDENIYA). (U)

NOV 63 278P
MONITOR: FTD TT63 559

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM GOSUDARSTVENNOYE
IZDATEL'STVO MEDITSINSKOY LITERATURY MEDGIZ-1962,
PP. 1-168, 1962.

DESCRIPTORS: (*PLUTONIUM, RADIOBIOLOGY), (*RADIOBIOLOGY,
PLUTONIUM), DISTRIBUTION, EXCRETION, BONES, TISSUES
(BIOLOGY), BIOSYNTHESIS, RADIOACTIVE ISOTOPES, RADIATION
INJURIES, PATHOLOGY, BLOOD, TOXICITY, LABORATORY
ANIMALS (U)

TRANSLATION OF FOREIGN RESEARCH ON THE DISTRIBUTION,
BIOLOGICAL EFFECT AND ACCELERATED ELIMINATION OF PLUTONIUM-
239.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 433 529

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE BIOLOGICAL ACTION OF HIGH ENERGY FAST NEUTRONS
AND PROTONS, (U)

JAN 64 31P MOSKALEV, YU I. ; PETROVICH,
I. K. ; STREL'TSOVA, V. N. ;
MONITOR: FTC TT63 1049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM BIOLOGICHESKOYE
DEISTVIYE BYSTRYKH NEYTRONOV I PROTONOV VYSOKIKH
ENERGIY, SIMPOZIUM PO BIOLOGICHESKOMY
VOZDEYSTVIYA NEYTRONNYKH OBLUCHENIY, SM-44/58, PP.
1-33, 7-11 OCT 63.

DESCRIPTORS: (*FAST NEUTRONS, RADIOBIOLOGY), (*PROTONS,
RADIOBIOLOGY), (*RADIOBIOLOGY, NUCLEAR REACTIONS),
RADIATION DOSAGE, RADIATION EFFECTS, LETHAL DOSAGE,
PATHOLOGY, NEOPLASMS, RATS, SURVIVAL (PERSONNEL),
ANALYSIS OF, LEUKEMIA, BLOOD, HEMOPOIETIC SYSTEM (U)
IDENTIFIERS: RADIATION TOLERANCE (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 448 438

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

STUDIES ON IRON ABSORPTION. INTESTINAL REGULATORY
MECHANISMS,

(U)

MAR 64 8P WHEBY, MUNSEY S. ; JONES,
LEEROY G. ; CROSBY, WILLIAM H. ;

UNCLASSIFIED REPORT

REPRINT FROM JNL. OF CLINICAL INVESTIGATION, 43:7,
PP. 1433-1422, 1964. (COPIES NOT SUPPLIED BY DDC)

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*METABOLISM, IRON), (*ABSORPTION, IRON),
TRACER STUDIES, RATS, DETERMINATION, RADIOACTIVE
ISOTOPES, LABELED SUBSTANCES, INTESTINES, HISTOLOGY,
DIET, BILE, GASTROINTESTINAL SYSTEM

(U)

IDENTIFIERS: DUODENUM

(U)

STUDIES ON RATE AND SITE OF IRON ABSORPTION WERE
PERFORMED DURING THE EARLY, RAPID PHASE OF IRON
ABSORPTION BY THE USE OF CLOSED INTESTINAL LOOPS IN
ANESTHETIZED BUT OTHERWISE INTACT RATS WITH VARYING
BODY IRON STORES. WITH THE USE OF FE59 AND WHOLE
BODY COUNTING, IT WAS POSSIBLE TO DETERMINE TOTAL
IRON ABSORBED FROM INTESTINAL LUMEN AND IRON
TRANSFERRED TO CARCASS DURING ACCURATELY TIMED
ABSORPTION PERIODS. THE FINDINGS SUGGEST THAT IRON
IS ABSORBED BY AN ACTIVE TRANSPORT MECHANISM
COMPRISED OF AT LEAST TWO STEPS: 1) MUCOSAL UPTAKE
OF IRON FROM LUMEN AND 2) MUCOSAL TRANSFER OF IRON
TO CARCASS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 449 639

TORONTO UNIV (ONTARIO)

CLEARING FACTOR LIPASE AND THE IRRADIATION SYNDROME, (U)

SEP 62 9P BAKER, D. G. ; MONKHOUSE, F. C.

UNCLASSIFIED REPORT
REPRINT FROM RADIATION RESEARCH, 20:1, PP. 8-16, SEP
63. (COPIES NOT SUPPLIED BY DDC)
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, BLOOD PLASMA), (*BLOOD
PLASMA, FATTY ACIDS), X RAYS, RATS, HEPARIN, METABOLISM,
ENZYMES, WHOLE BODY IRRADIATION, LIVER, RADIOPROTECTIVE
AGENTS (U)

IN RATS EXPOSED TO 800 R OF WHOLE-BODY
XIRRADIATION, THE CLEARING FACTOR LIPASE (CFL)
ACTIVITY OF PLASMA REMAINED ELEVATED FOR ABOUT 7
DAYS, COMPARED TO THAT OF PAIR-FED CONTROLS.
IRRADIATION OF THE LIVER REGION ONLY FAILED TO HAVE
A RADIOPROTECTIVE EFFECT. AN ELEVATED, HEPARIN-
INDUCED PLASMA CFL ACTIVITY DURING THE IRRADIATION
OR THROUGHOUT THE FIRST 5 DAYS POSTIRRADIATION WAS
ASSOCIATED WITH AN INCREASED 30-DAY MORTALITY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 455 892

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

CLEARANCE OF IRON FROM HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO,

(U)

JUN 64 5P WHERY, MUNSEY S. ; BALCERZAK,
STANLEY P. ; ANDERSON, PEARL ; CROSBY, WILLIAM H.
;

UNCLASSIFIED REPORT

REPRINT FROM BLOOD. 24:6, PP. 765-769, DEC
64. (COPIES NOT SUPPLIED BY DDC)

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*IRON, METABOLIC DISEASES), BIOCHEMISTRY,
BLOOD ANALYSIS, TRACER STUDIES, RADIOACTIVE ISOTOPES,
BLOOD PROTEINS, TRANSPORT PROPERTIES, PHYSIOLOGY,
MEDICAL RESEARCH

(U)

IDENTIFIERS: TRANSFERRIN

(U)

THE IRON TRANSPORT FUNCTION OF TRANSFERRIN FROM
NORMAL SUBJECTS AND PATIENTS WITH IDIOPATHIC
HEMACHROMATOSIS HAS BEEN STUDIED USING THE
RADIOISOTOPES FE59 AND FE55. IT WAS CONCLUDED
THAT TRANSFERRIN FROM HEMOCHROMATOTIC PATIENTS
FUNCTIONS IN A NORMAL MANNER IN VIVO. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 455 894

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

IRON EXCRETION BY THE SKIN. SELECTIVE LOCALIZATION
OF IRON-59 IN EPITHELIAL CELLS, (U)

JUL 64 7P WEINTRAUB, LEWIS R. ; DEMIS,
D. JOSEPH ; CONRAD, MARCEL E. ; CROSBY, WILLIAM
H. ;

UNCLASSIFIED REPORT

REPRINT FROM AMERICAN JNL. OF PATHOLOGY, 46:1PP.
121-127, JAN 65. (COPIES NOT SUPPLIED BYDDC)

DESCRIPTORS: (*IRON, SKIN(ANATOMY)), (*SKIN(ANATOMY),
IRON), EXCRETION, LABELED SUBSTANCES, TRACER STUDIES,
RADIOACTIVE ISOTOPES, PATHOLOGY, AUTORADIOGRAPHY,
METABOLISM (U)

FOLLOWING AN INTRAVENOUS DOSE OF IRON-59 LOSS OF
WHOLE BODY RADIOACTIVITY WAS SIGNIFICANTLY GREATER
THAN COULD BE ACCOUNTED FOR IN CUMULATIVE COLLECTIONS
OF STOOL AND URINE. SELECTIVE LOCALIZATION OF IRON
IN THE EPITHELIAL CELLS OF THE EPIDERMIS AND ITS
APPENDAGES WITH SUBSEQUENT EXTERNAL LOSS WAS
DEMONSTRATED IN NORMAL VOLUNTEERS WITH THE AID OF
RADIOAUTOGRAPHY. THAT THIS WAS AN ACTIVE EXCRETORY
PROCESS WAS SUPPORTED BY THE FINDING OF STAINABLE
IRON WITH A SIMILAR DISTRIBUTION IN THE SKIN OF A
PATIENT WITH HEMOCHROMATOSIS. THUS THE SKIN AS
WELL AS THE SMALL INTESTINE FUNCTIONS AS AN EXCRETORY
ORGAN FOR IRON THROUGH THE LOSS OF IRON-LOADED
EPITHELIAL CELLS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 455 900

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

EFFECT OF HEMOLYSIS ON EXCRETION AND ACCUMULATION OF
IRON IN THE RAT, (U)

APR 64 3P KAUFMAN, RICHARD M. ; POLLACK,
SIMEON ; ANDERSON, PEARL ; CROSBY, WILLIAM H. ;

UNCLASSIFIED REPORT

REPRINT FROM THE AMERICAN JNL. OF PHYSIOLOGY,
207:5, PP. 1041-1043, NOV 64. (COPIES NOT SUPPLIED BY
DDC)

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*HEMOLYSIS, METABOLISM), (*METABOLISM,
IRON), (*IRON, EXCRETION), TRACER STUDIES, RADIOACTIVE
ISOTOPES, HYDRAZINE DERIVATIVES, AROMATIC COMPOUNDS,
RATS, ABSORPTION (BIOLOGICAL), IRON COMPOUNDS, CHLORIDE (U)
IDENTIFIERS: IRON(III) CHLORIDE (U)

TWO GROUPS OF RATS WERE INJECTED INTRAPERITONEALLY
WITH TRACER AMOUNTS OF FE59 CL3 AND THE RATE OF
LOSS OF RADIOACTIVITY WAS MEASURED OVER A PERIOD OF
105 DAYS. BOTH GROUPS OF RATS WERE MAINTAINED ON A
REGULAR RAT PELLET DIET BUT THE EXPERIMENTAL GROUP
ALSO RECEIVED ACETYLPHENYLHYDRAZINE WEEKLY IN ORDER
TO INDUCE HEMOLYTIC DISEASE. AT THE END OF THE
EXPERIMENT ALL RATS WERE KILLED AND THE BODY IRON
CONTENT OF EACH DETERMINED. IT WAS OBSERVED THAT
THE FRACTION OF BODY IRON LOST DAILY WAS MARKEDLY
INCREASED IN RATS UNDERGOING HEMOLYSIS. FURTHER,
THESE RATS ACCUMULATED IRON IN EXCESS OF NORMAL,
INDICATING THAT IRON ABSORPTION WAS INCREASED TO A
GREATER EXTENT THAN WAS IRON EXCRETION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 464 714

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

CHANGES IN CS137 RETENTION AND ROUTES OF ELIMINATION
AS EFFECTED BY EXTERNAL FACTORS, (U)

JAN 65 9P MCPEAK, DAILEY W. ; LODGE,

GORDON M. ; PARR, WORDIE H. ;

REPT. NO. USAMRL-617

PROJ: DA-6-X-9926001

TASK: 6-X-992600107

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON BASIC RESEARCH IN LIFE
SCIENCES.

DESCRIPTORS: (*CESIUM, RADIOACTIVE ISOTOPES),
(*RADIOBIOLOGY, METABOLISM), HALF LIFE, EXCRETION, RATS,
PARTIAL BODY IRRADIATION, WHOLE BODY IRRADIATION, FOOD,
CONSUMPTION, RADIATION EFFECTS, TEMPERATURE, WATER,
URINE, VOLUME. (U)

INVESTIGATIONS WERE MADE TO DETERMINE THE ROLES
THAT COLD AND X-IRRADIATION PLAYED UPON THE
BIOLOGICAL HALF TIME OF CESIUM-137 IN RATS.
PARTIAL AND WHOLE-BODY X-IRRADIATION INCREASED
THE BIOLOGICAL HALF-TIME OF CESIUM-137 WHILE COLD
WITH THE ASSOCIATED INCREASED FOOD CONSUMPTION AND
FLUID EXCHANGE DECREASED THE BIOLOGICAL HALF-TIME.
ANALYSIS OF FECAL AND URINE OUTPUTS SHOWED THAT
INCREASED DIURESIS DOES NOT INVARIABLY FACILITATE
CESIUM-137 EXCRETION. THE POSSIBLE ROLES OF FOOD
INGESTION AND FECAL OUTPUTS WERE DISCUSSED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 465 242

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE INFLUENCE OF AET AND HYPOXIA ON RECOVERY FROM
RADIATION INJURY IN MICE, (U)

MAY 65 12P AINSWORTH ,E. JOHN ;PHILLIPS
 ,THEODORE L. ;KENDALL,KATHLEEN ;
REPT. NO. USNRDL-TR-851
MONITOR: NAVMED MR005.08-5201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, RADIOPROTECTIVE AGENTS),
(*RADIOPROTECTIVE AGENTS, RADIOBIOLOGY), (*HYPOXIA,
RADIOBIOLOGY), X RAYS, MICE, RADIATION INJURIES,
SUBLETHAL DOSAGE, EFFECTIVENESS, RADIATION TOLERANCE,
BROMIDES (U)
IDENTIFIERS: AET RADIOPROTECTIVE AGENTS (U)

AET AND HYPOXIA APPEAR TO ACT AS RADIATION DOSE
REDUCERS. THE PRESENT STUDIES WERE CONDUCTED,
USING THE SPLIT-DOSE TECHNIQUE, TO DETERMINE THE
INFLUENCE OF THESE PROTECTANTS ON INITIAL INJURY AND
SUBSEQUENT RECOVERY FROM SUBLETHAL 250 KVP X-RAY
EXPOSURE. THE RESULTS DEMONSTRATE THAT RECOVERY
FROM THEORETICALLY EQUIVALENT DOSES OF IRRADIATION IS
SLOWER IN PROTECTED MICE THAN IN NONPROTECTED MICE.
THIS WOULD SUGGEST THAT THE INITIAL INJURY IN THE
PROTECTED AND NONPROTECTED GROUPS IS NOT EQUIVALENT.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 466 883

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

REJECTION OF ALLOGENEIC SKIN GRAFTS AND PRODUCTION OF
ISOHEMAGGLUTININS BY SENSITIZED MICE AFTER SUBLETHAL
IRRADIATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

MAY 65 10P TYAN, M. L. ; COLE, L. J. ;

REPT. NO. USNRDL-TR-857

TASK: MR005 08 1200

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*TRANSPLANTATION, RADIATION EFFECTS), X
RAYS, SENSITIVITY, ANTIGENS + ANTIBODIES, AGGLUTININS,
IMMUNOLOGY, WHOLEBODY IRRADIATION, CELLS(BIOLOGY),
SPLEEN, SKIN(ANATOMY), BIOCHEMISTRY, RECOVERY (U)
IDENTIFIERS: HEMAGGLUTININS, RESPONSE(BIOLOGY) (U)

MALE B6D2F1 MICE WERE SENSITIZED BY THE
FOLLOWING MEANS: (1) AN ALLOGENEIC (A/HEJ)
SKIN GRAFT; (2) THREE S.C. INJECTIONS OF A/
HEJ SPLEEN CELLS IN FREUND'S COMPLETE ADJUVANT;
OR (3) THREE I.P. INJECTIONS OF A/HEJ SPLEEN
CELLS. ONE WEEK AFTER THE LAST INJECTION, MICE
FROM EACH GROUP RECEIVED 670 RAD WHOLE-BODY X
RADIATION. SERA WERE OBTAINED FREQUENTLY FOR
HEMAGGLUTININ ASSAY, AND THE MICE WERE GRAFTED WITH
A/HEJ SKIN 30 DAYS OR 61 DAYS AFTER IRRADIATION.
IN ALL GROUPS THE HOMOGRAFT RESPONSE WAS
SIGNIFICANTLY IMPAIRED 30 AND 61 DAYS AFTER
IRRADIATION; HOWEVER, IN GROUPS (1) AND (2)
NORMAL SECONDARY HEMAGGLUTININ RESPONSES WERE NOTED.
THIS ASYNCHRONOUS RECOVERY OF THE HEMAGGLUTININ AND
HOMOGRAFT RESPONSES SUGGESTED THAT DISTINCT CELL
POPULATIONS WERE RESPONSIBLE FOR THESE TWO
MANIFESTATIONS OF IMMUNOLOGIC REACTIVITY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 491 993

NAVAL MEDICAL RESEARCH INST BETHESDA MD

PHARMACOLOGICAL STUDIES ON IRRADIATED ANIMALS. PART
I. SCOPE AND METHODOLOGY. (U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

MAY 52 14P ELLINGER, FRIEDRICH ;

MONITOR: NAVMED NM-006-012.05.04

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 6, AD-456 922.

DESCRIPTORS: (*PHARMACOLOGY, *RADIOBIOLOGY), DRUGS,
ANIMALS, RADIOPROTECTIVE AGENTS, MORTALITY RATES,
COUNTERMEASURES, X RAYS, LETHAL DOSAGE, DEOXYRIBONUCLEIC
ACIDS, RIBONUCLEIC ACIDS, BIOASSAY, RADIATION EFFECTS,
WHOLE BODY IRRADIATION (U)

THE SCOPE OF PHARMACOLOGICAL STUDIES ON IRRADIATED ANIMALS HAS BEEN DISCUSSED AND THE NECESSITY FOR CLARIFICATION OF PROCEDURES IN EXPERIMENTAL STUDIES IN THIS FIELD HAS BEEN POINTED OUT. AS TWO MAIN LINES OF EXPERIMENTAL APPROACH IN STUDIES UTILIZING THE LETHAL EFFECT OF X-RAYS IN TOTAL BODY IRRADIATION, THE FOLLOWING HAVE BEEN SUGGESTED: (1) USE OF VARIOUS DRUG CONCENTRATIONS ON ONE X-RAY DOSE, PREFERABLY A DOSE CLOSE TO THE LD(50)/14 DAYS FOR THE PARTICULAR ANIMAL SPECIES; AND (2) THE USE OF ONE DRUG CONCENTRATION ON AT LEAST TWO RADIATION DOSES, ONE OF THEM THE MID-LETHAL, THE OTHER OF EITHER THE LOW-LETHAL, OR HIGH-LETHAL RANGE. THE PROCEDURES ARE EXEMPLIFIED BY PRESENTATION OF PRELIMINARY DATA CONCERNING THE EFFECTS OF DEOXYRIBONUCLEIC AND RIBONUCLEIC ACID AS WELL AS THOSE OF A SPLEEN EXTRACT ON THE RADIATION INDUCED MORTALITY IN MICE. THE NECESSITY OF UTILIZING THE ENTIRE LETHAL DOSE CURVE FOR THE EVALUATION OF DRUG EFFECTS HAS BEEN DEMONSTRATED. SUPPLEMENTARY METHODS FOR FURTHER ELUCIDATION OF THE MECHANISMS BY WHICH PHARMACOLOGICAL AGENTS MODIFY THE LETHAL EFFECT OF IONIZING RADIATION CONSISTING IN DETAILED HISTOLOGICAL AND BIO-ASSAY STUDIES OF ISOLATED ORGANS HAVE BEEN POINTED OUT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 601 115

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CHROMOSOME ABNORMALITIES IN LIVER AND MARROW OF MICE
IRRADIATED WITH FAST NEUTRONS, GAMMA-, AND X RAYS.
EFFECT OF DOSE RATE. (U)

APR 64 30P NOWELL, P. C. ; CRAIG, D. ;
MATTHEWS, F. ; COLE, L. J. ;
REPT. NO. USNRDL-TR-740
PROJ: MR005.08
TASK: MR005.08.52

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CHROMOSOMES, RADIATION EFFECTS),
(*RADIATION EFFECTS, CHROMOSOMES), (*RADIATION DOSAGE,
GENETICS), (*GENETICS, RADIATION DOSAGE), ANOMALIES, X
RAYS, GAMMA RAYS, FAST NEUTRONS, LIVER, BONE MARROW,
SUBLETHAL DOSAGE, MICE, DOSE RATE (U)

LOW DOSE RATE IRRADIATION WITH EITHER GAMMA-RAYS OR
FAST NEUTRONS RESULTED IN FEWER CHROMOSOME
ABNORMALITIES IN LIVER AND BONE MARROW THAN DID
COMPARABLE HIGH DOSE RATE IRRADIATION WITH X RAYS
OR NEUTRONS. NEUTRONS GENERALLY PRODUCED MORE
ABERRATIONS THAN THE LOW RADIATIONS, BUT A DOSE RATE
EFFECT WAS APPARENT WITH BOTH TYPES OF RADIATION.
UNSTABLE CHROMOSOME ABERRATIONS, AS WELL AS TOTAL
ABERRATIONS, WERE REDUCED IN THE LOW DOSE RATE
GROUPS. EVIDENCE FOR THE ACTION OF AN INTRACELLULAR
REPAIR PROCESS. FOR BOTH TECHNICAL AND THEORETICAL
REASONS, THE LIVER AND BONE MARROW ARE NOT IDEAL
SYSTEMS FOR QUANTITATIVE STUDIES OF THE EFFECTS OF
IONIZING RADIATION ON MAMMALIAN CHROMOSOMES. IN A
FEW MICE, THE CLONAL CHROMOSOME CHANGES PROVIDED A
MEANS OF IDENTIFYING MYELOID CELLS IN THE LIVER
PREPARATIONS. DIVIDING DIPLOID CELLS IN BOTH THE
MARROW AND LIVER SHOWED THE SAME CHROMOSOME CHANGE
AND WERE APPARENTLY DERIVED FROM A COMMON RADIATION-
DAMAGED ANCESTOR. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 601 792

USAF RADIATION LAB UNIV OF CHICAGO ILL

INFLUENCE OF X-IRRADIATION ON DEVELOPMENT OF
MICROSOME OXIDASE AND REDUCTASE ACTIVITY IN THE
LIVERS OF YOUNG MALE RATS. (U)

JUN 64 10P HIETBRINK, BERNARD E. ;
DUBOIS, KENNETH P. ;
CONTRACT: AF41 (609)-1693
PROJ: 7757
TASK: 775702
MONITOR: SAM TDR64 29

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, OXIDOREDUCTASES),
(*OXIDOREDUCTASES, RADIATION EFFECTS), CYTOCHEMISTRY,
LIVER, MICROSOMES, RATS, X RAYS, ENZYMES, WHOLE BODY
IRRADIATION, BIOSYNTHESIS, PHOSPHATES, SULFUR
COMPOUNDS (U)

THE INFLUENCE OF X-RAY ON THE DEVELOPMENT OF AN
OXIDASE IN LIVER MICROSOMES THAT CATALYZES THE
OXIDATIVE DESULFURATION OF PHOSPHOROTHIOATES WAS
STUDIED. EXPOSURE OF 23-DAY OLD MALE RATS TO 200 R
OR 400 R ALMOST COMPLETELY INHIBITED THE DEVELOPMENT
OF PHOSPHOROTHIOATE OXIDASE ACTIVITY DURING THE 3-
WEEK OBSERVATION PERIOD FOLLOWING RADIATION.
SUBSTANTIAL INHIBITION OF THE DEVELOPMENT OF
OXIDASE ACTIVITY WAS ALSO OBSERVED AFTER EXPOSURE OF
THE ANIMALS TO 100 R. MARKED INHIBITION OF THE
DEVELOPMENT OF THE ENZYME IN THE REGENERATING LIVERS
OF PARTIALLY HEPATECTOMIZED RATS WAS OBSERVED
FOLLOWING EXPOSURE TO X-RAY OF 200 R TO 600 R. THE
ABSENCE OF AN INHIBITORY EFFECT BY X-IRRADIATION ON
PHOSPHOROTHIOATE OXIDIZING ACTIVITY OF THE LIVERS OF
ADULT MALE RATS SUGGESTS THAT THE EFFECT OF X-RAY IS
ON SOME PROCESS INVOLVED IN THE SYNTHESIS OF
PHOSPHOROTHIOATE OXIDASE. X-IRRADIATION HAD NO
EFFECT ON THE DEVELOPMENT OF REDUCTASE ACTIVITY IN
THE LIVERS OF YOUNG RATS INDICATING SELECTIVITY IN
THE ACTION OF X-RAY ON THE DEVELOPMENT OF MICROSOME
ENZYMES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 610 300

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

MEDICAL RADIOLOGY, 1964, VOL. 9, NO. 3: SELECTED
ARTICLES.

(U)

JAN 65 27P

REPT. NO. FTD-TT-64-746

MONITOR: TT , 65 61012

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF
MEDITSINSKAYA RADIOLOGIYA (USSR) 1964, V. 9, NO. 3, P.
52-66.

DESCRIPTORS: (*RADIOBIOLOGY, MEDICAL RESEARCH),
RADIATION EFFECTS, EYE, VISION, RADIATION DOSAGE,
RADIATION SICKNESS, OPHTHALMOLOGY, GAMMA RAYS, NEUTRONS,
MICE, SUBLETHAL DOSAGE, HISTOLOGICAL TECHNIQUES,
LEUKOCYTES, BONE MARROW, METABOLISM, MORPHOLOGY
(BIOLOGY), USSR

(U)

CONTENTS: (1) STATE OF THE ORGAN OF VISION
UNDER THE EFFECT OF GAMMA NEUTRON RADIATION IN
DOSAGES CLOSE TO MAXIMUM PERMISSIBLE; (2) DOSAGE
CHARACTERISTICS AND PECULIARITIES OF BEING AFFECTED
DURING EXPOSURE OF MICE TO GAMMA-IRRADIATION OF A
DOSAGE POWER; (3) HISTOCHEMICAL CHANGES IN
LEUKOCYTES AT EXPERIMENTAL RADIATION ILLNESS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 611 045

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PRIMARY AND INITIAL PROCESSES IN THE BIOLOGICAL
EFFECTS OF RADIATION (SELECTED ARTICLES), (U)

JAN 65 366P

REPT. NO. FTD-TT-64-515

MONITOR: TT , 65-61713

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO.
PERVICHNYE I NACHAL'NYE PROTSESSY BIOLOGICHESKOGO
DEISTVIYA RADIATSII, MOSCOW, 1963, P. 1-44, 53-156,
192-201, 214-233, 243-270, 277-278.

DESCRIPTORS: (*RADIOBIOLOGY, SYMPOSIA), (*RADIATION
EFFECTS, CELLS (BIOLOGY)), BIOCHEMISTRY, BACTERIA, X
RAYS, BACTERIOPHAGES, PROTEINS, BIOSYNTHESIS,
NUCLEOPROTEINS, TRACER STUDIES, RADIOPROTECTIVE AGENTS,
METABOLISM, PHOSPHORUS, AMINO ACIDS, LIPIDS,
DEOXYRIBONUCLEIC ACIDS, RADIATION INJURIES, ESCHERICHIA
COLI, TISSUE CULTURE CELLS, REPRODUCTION (PHYSIOLOGY),
CHROMOSOMES, ENZYMES, YEASTS, NERVES, MUSCLES, USSR (U)

THE PRIMARY AND INITIAL CELLULAR PROCESSES FORMING
THE BASIS OF THE BIOLOGICAL EFFECTS OF RADIATION ARE
DISCUSSED IN EIGHTEEN REPORTS WHICH WERE PRESENTED AT
AN INTERNATIONAL SYMPOSIUM. THE SYMPOSIUM WAS
ORGANIZED BY THE ACADEMY OF SCIENCES OF THE
USSR, WITH THE SUPPORT OF THE DEPARTMENT OF
NATURAL SCIENCES OF UNESCO AND THE
INTERNATIONAL ATOMIC ENERGY AGENCY. THE
REPORTS, INCLUDING GENERAL DISCUSSIONS, DEAL WITH THE
PRIMARY EFFECTS OF IONIZING RADIATION ON MOLECULAR,
SUBCELLULAR, AND CELLULAR LEVELS. THE SAME
MATERIAL IS REPORTEDLY BEING PUBLISHED IN ENGLISH
BY THE ACADEMIC PRESS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 611 687

ARMY TROPICAL RESEARCH MEDICAL LAB NEW YORK 09851

EFFECTS OF TRIIODOTHYRONINE IN ALTERING THE RESPONSE
OF KIDNEYS TO COBALT-60 RADIATION, (U)

63 7P CALDWELL, WILLIAM L. ; THOMASSEN,
ROBERT W. ; BOSCH, ANTONIO ;
PROJ: 6 X 97 85 001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN RADIOLOGY (U. S.) V81 N4
P657-663 OCT 1963 (COPIES NOT AVAILABLE TO DDC OR
CLEARINGHOUSE CUSTOMERS). PRESENTED AT THE ANNUAL
MEETING OF THE RADIOLOGICAL SOCIETY OF NORTH
AMERICA (NO. 48) CHICAGO, ILL. 25-30 NOV 1962.

DESCRIPTORS: (*KIDNEYS, RADIATION INJURIES),
(*RADIOPROTECTIVE AGENTS, IODINE COMPOUNDS), TISSUES
(BIOLOGY), RADIATION DOSAGE, THYROID GLAND, TISSUE
EXTRACTS, RADIATION EFFECTS, DISEASES, RADIOACTIVE
ISOTOPES, NEOPLASMS, BLOOD VESSELS, SKIN (ANATOMY),
CANCER, COBALT, HISTOLOGICAL TECHNIQUES, RABBITS (U)

THE FEAR OF INDUCING RADIATION NEPHRITIS RESTRICTS
THE AMOUNT OF RADIATION DELIVERED TO RETROPERITONEAL
TUMORS. IF THIS RADIATION INJURY COULD BE MODIFIED,
THE THERAPIST WOULD THEN BE LESS FEARFUL OF POSSIBLY
INDUCING THIS OFTEN FATAL COMPLICATION. SINCE
TRIIODOTHYRONINE HAS PROVED BENEFICIAL IN REDUCING
RADIATION INJURY OF THE SKIN AND SUBCUTANEOUS
TISSUES, THE EFFECTS OF THIS COMPOUND WERE EVALUATED
FOLLOWING PRODUCTION OF RADIATION INJURY IN RABBIT
KIDNEYS. SURPRISINGLY, TRIIODOTHYRONINE DID NOT
FAVORABLY ALTER THE REACTION, BUT MADE IT WORSE.
THE REASON FOR THIS VARIANCE WITH THE EFFECTS
PREVIOUSLY REPORTED IN SKIN IS NOT CERTAIN. TISSUE
SPECIFICITY OR DIFFERENCE IN VASCULARITY MAY BE
IMPORTANT FACTORS. THE IRRADIATED SKIN OF THE
TRIIODOTHYRONINE-TREATED ANIMALS SHOWED SLIGHTLY LESS
HISTOLOGIC ALTERATION THAN THE IRRADIATED SKIN OF THE
CONTROL ANIMALS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 614 962

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EFFECT OF ADENOSINETRIPHOSPHORIC ACID (ATP) ON THE
METABOLISM OF PHOSPHOPROTEINES IN THE LIVER AT
RADIATION INFLECTION, (U)

APR 65 12P VINOGRADOVA, R. P. ;
REPT. NO. FTD-TT-64-1163
MONITOR: TT , 65-62151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF
UKRAYINS'KYI BIOKHIMICHNYI ZHURNAL (USSR) V35 N2
P274-9 1963.

DESCRIPTORS: (*RADIOBIOLOGY, PHOSPHOPROTEINS),
(*PHOSPHOPROTEINS, RADIATION EFFECTS), (*ADENOSINE
PHOSPHATES, RADIOBIOLOGY), PHOSPHORUS, METABOLISM, X
RAYS, LETHAL DOSAGE, TISSUES (BIOLOGY), LIVER, GUINEA
PIGS, RADIATION SICKNESS, USSR (U)

DURING THE INCUBATION OF NORMAL LIVER TISSUE, WHEN
ATP IS ADDED IN AMOUNT OF 0.35 M MOLES PER 1 G OF
TISSUE ARE OBSERVED INCREASES IN THE AMOUNT AND
INTENSITY OF RESTORATION OF PHOSPHOPROTEINE
PHOSPHORUS. DURING THE INCUBATION OF SAMPLES FROM
LIVER TISSUES OF ANIMALS EXPOSED TO LETHAL DOSAGE OF
X-RAY RADIATION, THE ADDITION OF ATP DOES NOT
AFFECT THE CONTENT NOR INTENSITY OF RESTORATION OF
PHOSPHOPROTEINE PHOSPHORUS. THE CONTENT OF ATP
IN THE LIVER DECREASES CONSIDERABLY AFTER THE ANIMALS
ARE EXPOSED TO X-RAY RADIATION OF LETHAL CAPACITY.
MAXIMUM REDUCTION IN AMOUNT OF ATP IS OBSERVED ON
THE TENTH DAY OF RADIATION ILLNESS. UNDER THE
EFFECT OF GENERAL X-RAY RADIATION THE CONTENT OF
PHOSPHORUS IN PHOSPHOPROTEINES DROPS ON AN AVERAGE TO
30-35%, AND THE RESTORATION INTENSITY IN COMPARISON
WITH STANDARD RISE ON AN AVERAGE BY 20% IN ALL
INVESTIGATED PERIODS AFTER THE EXPOSURE. THE
CONTENT OF INORGANIC PHOSPHORUS IN LIVER OF EXPOSED
ANIMALS RISES ON AN AVERAGE BY 20-35%, AND THE
SPECIFIC ACTIVITY REMAINS WITHOUT CHANGES.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 618 175

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

LONG-LIVED ELECTRON SPIN RESONANCES IN RATS
IRRADIATED AT ROOM TEMPERATURE,

(U)

AUG 64 8P SWARTZ, HAROLD M. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN RADIATION RESEARCH V24 N4
P579-86 APR 1965 (COPIES NOT AVAILABLE TO DDC OR
CLEARINGHOUSE CUSTOMERS).

DESCRIPTORS: (*RADIOBIOLOGY, MAGNETIC RESONANCE),
(*MAGNETIC RESONANCE, DOSIMETERS), (*BONES, RADIATION
EFFECTS), TISSUES(BIOLOGY), GAMMA RAYS, RADIATION
DOSAGE, DOSE RATE, SPECTROSCOPY, NUCLEAR MAGNETIC
RESONANCE, LEGS, RATS

(U)

THE PROLONGED EXISTENCE OF RADIATION-INDUCED
UNPAIRED ELECTRON SPECIES IN THE FEMURS OF LIVING
RATS HAS BEEN DEMONSTRATED BY ESR TECHNIQUES.
THESE FINDINGS APPEAR TO HAVE SIGNIFICANCE IN BOTH
RADIOBIOLOGICAL THEORY AND DOSIMETRY OF RADIATION
ACCIDENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 618 263

SASKATCHEWAN UNIV SASKATOON DEPT OF BACTERIOLOGY

BOUND WATER, INOSITOL, AND THE EFFECT OF X-RAYS ON
ESCHERICHIA COLI, (U)

MAY 64 8P WEBB, S. J. ; DUMASIA, M. D. ;
PROJ: D52 18 50 04

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN CANADIAN JOURNAL OF
MICROBIOLOGY V10 P877-85 1964 (COPIES AVAILABLE ONLY TO
DDC USERS).

DESCRIPTORS: (*RADIATION EFFECTS, ESCHERICHIA COLI),
(*RADIOBIOLOGY, DEHYDRATION), (*RADIOPROTECTIVE AGENTS,
SUGAR ALCOHOLS), X RAYS, HUMIDITY, STABILITY,
BIOCHEMISTRY, CANADA (U)

AEROSOLS OF ESCHERICHIA COLI B WERE SUBJECTED
TO 250 KV X-RAYS. IT WAS FOUND THAT MAXIMAL X-
RAY DAMAGE OCCURRED AT 70 TO 80% RELATIVE HUMIDITY
(R.H.). AT THESE R.H. VALUES ONLY THE WATER
BOUND DIRECTLY TO CELL MACROMOLECULES REMAINS, AND IF
THE WATER LAYERS WERE INCREASED BY USING HIGHER
HUMIDITIES, X-RAY DAMAGE DECREASED. ALSO, AT
R.H. LEVELS BELOW 70% A SHARP DECREASE IN THE
SENSITIVITY OF THE CELLS TO THE RADIATION OCCURRED.
SEVERAL CHEMICALS KNOWN TO PROTECT CELLS AGAINST
DESICCATION, ULTRAVIOLET, AND X-RAY DAMAGE WERE
EXAMINED AND OF THESE I-INOSITOL PROVED THE MOST
SUCCESSFUL. THE DIFFERENCE IN THE PROTECTIVE
ABILITY OF THESE VARIOUS COMPOUNDS INDICATED THAT
SOME PROTECT CELLS AGAINST DESICCATION DAMAGE BY
RETAINING WATER, OTHERS BY REPLACING BOUND-WATER
MOLECULES IN MACROMOLECULAR STRUCTURE BUT THOSE
RETAINING WATER WILL NOT PROTECT AGAINST X-RAYS.
THE RESULTS SUGGEST THAT THE PHYSICAL REMOVAL OR
IONIZATION OF A STRATEGIC BOUND-WATER MOLECULE BY
X-RAYS CAUSES MOST OF THE CELL DEATHS RATHER THAN
IONIZATIONS OCCURRING IN THE FREE WATER AS THE
PRESENCE OF THE LATTER APPEARS TO OFFER CELLS A
MEASURE OF PROTECTION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 619 597

SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

SILVER-110M AND COBALT-60 IN OCEANIC AND COASTAL
ORGANISMS, (U)

AUG 65 8P FOLSOM, T. R. ; YOUNG, D. R. ;
CONTRACT: NONR221623
PROJ: NR083 005

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN NATURE V206 N4986 P803-6
MAY 22 1965 (COPIES AVAILABLE ONLY TO DDC USERS).

DESCRIPTORS: (*AQUATIC ANIMALS, RADIOBIOLOGY),
(*RADIOBIOLOGY, AQUATIC ANIMALS), (*COBALT,
RADIOBIOLOGY), (*SILVER, RADIOBIOLOGY), RADIOACTIVE
ISOTOPES, MARINE BIOLOGY, COINCIDENCE COUNTING, GAMMA
RAY SPECTROSCOPY, ECOLOGY, PACIFIC OCEAN, OCEANOGRAPHY,
TRACER STUDIES (U)

REPRINT: SILVER-110M AND COBALT-60 IN OCEANIC AND
COASTAL ORGANISMS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 621 648

LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

BIOLOGICAL EFFECTS OF MICROWAVES.

(U)

DESCRIPTIVE NOTE: COMPILATION OF ABSTRACTS.

SEP 65 103P

REPT. NO. ATD-P65-68

MONITOR: TT , 65-64023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON SURVEYS OF SOVIET
SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (*MICROWAVES, RADIOBIOLOGY),
(*RADIOBIOLOGY, MICROWAVES), (*ELECTROMAGNETIC
RADIATION, RADIOBIOLOGY), CENTRAL NERVOUS SYSTEM,
THYROID GLAND, CONDITIONED RESPONSE, MOTOR REACTIONS,
NERVE CELLS, CHOLINESTERASE, REPRODUCTION(PHYSIOLOGY),
BLOOD CIRCULATION, GASTROINTESTINAL SYSTEM, BLOOD CELLS,
NUCLEIC ACIDS, HEART, BRAIN, MAMMALS,
THRESHOLDS(PHYSIOLOGY), MEDICAL EXAMINATION, INDUSTRIAL
MEDICINE, THERAPY, ULTRAHIGH FREQUENCY, SUPERHIGH
FREQUENCY, HIGH FREQUENCY, LOW FREQUENCY, DOSIMETERS,
REVIEWS, ABSTRACTING, USSR (U)
IDENTIFIERS: BIOELECTRICITY, MICROWAVE
EFFECTS(BIOLOGICAL) (U)

CONTENTS: HYGIENIC AND CLINICAL ASPECTS OF
MICROWAVES (1937-1964); EXPERIMENTAL EFFECTS OF
MICROWAVES (1955-1964); EFFECTS OF A CONSTANT
MAGNETIC FIELD AND LOW-FREQUENCY ELECTROMAGNETIC
FIELDS ON HIGHER NERVOUS ACTIVITY (1952-1964);
DISCUSSIONS AND REVIEWS ON BIOLOGICAL EFFECTS,
EXPERIMENTAL METHODS AND MECHANISMS OF THE ACTION OF
MICROWAVES (1957-1964). (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 623 079

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

URETHAN-INDUCED LUNG TUMORS IN MICE: X-RADIATION DOSE
DEPENDENT INHIBITION, (U)

SFP 65 15P FOLEY, WILLIAM A. ; COLE,
LEONARD J. ;
REPT. NO. USNRDL-TR-911
PROJ: MR005 08 1200
TASK: MR005 08 1200 2
MONITOR: NAVMED , MR005.08-1200

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, LUNG), (*NEOPLASMS,
LUNG), (*RADIATION DOSAGE, NEOPLASMS), WHOLE BODY
IRRADIATION, X-RAYS, CANCER, CELLS(BIOLOGY), INHIBITION,
MICE (U)
IDENTIFIERS: URETHANES (U)

ADULT MALE LAF SUB 1 MICE RECEIVED SINGLE
WHOLEBODY X RAY EXPOSURES OF 100, 300, 500, OR 700
RADS, FOLLOWED ONE DAY LATER BY SINGLE INJECTIONS OF
URETHAN (1 MG/G). THE MICE WERE SACRIFICED 25
WEEKS LATER, AND THE LUNGS EXAMINED GROSSLY AND
MICROSCOPICALLY FOR TUMORS. ALL OF THE MICE IN
GROUP RECEIVING 100 RAD PLUS URETHAN EXHIBITED LUNG
TUMORS (ALVEOGENIC CARCINOMAS), WITH A MEAN OF
3.1 TUMORS PER MOUSE. THIS LUNG TUMOR INCIDENCE WAS
IDENTICAL WITH THAT OCCURRING IN THE MICE WHICH
RECEIVED URETHAN ONLY. HOWEVER, A DEFINITE
REDUCTION IN LUNG TUMOR INCIDENCE AND NUMBER OF
TUMORS PER MOUSE WAS OBSERVED AT THE 500 RAD DOSE
(66% INCIDENCE AND 1.8 TUMORS PER MOUSE,
RESPECTIVELY) AND AT 700 RAD (59% INCIDENCE AND
1.3 TUMORS PER MOUSE). THUS, THE X RADIATION
SUPPRESSION OF URETHAN-INDUCED LUNG TUMORS IN MICE IS
DOSE-DEPENDENT IN THE RANGE OF 500 RAD TO 900 RAD.
THE DATA SUGGEST THAT THIS TUMOR SUPPRESSION IS
CORRELATED WITH A DIRECT RADIATION INHIBITION OF
ALVEOLAR CELL PROLIFERATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 623 641

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AN ANALYSIS OF LOCAL AND SYSTEMIC EFFECTS OF IONIZING
RADIATION ON BONE GROWTH, (U)

SEP 65 29P PHILLIPS, RICHARD D. ;
KIMELDORF, DONALD J. ;
REPT. NO. USNRDL-TR-898
PROJ: MR005 08 5201
TASK: 2
MONITOR: NAVMED , MR005.08-5201-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, BONES), (*BONES,
RADIATION EFFECTS), WHOLE BODY IRRADIATION, PARTIAL BODY
IRRADIATION, X RAYS, GROWTH(PHYSIOLOGY),
TISSUES(BIOLOGY), HEAD(ANATOMY), ABDOMEN, THORAX, RAT(U)

RADIATION-INDUCED RETARDATION OF FEMUR AND TIBIA
GROWTH WAS DETERMINED IN YOUNG MALE RATS AT 60 DAYS
AFTER TOTAL- OR PARTIAL-BODY EXPOSURE TO 450 R OF
X-RAYS. APPROXIMATELY 52% OF THE GROWTH REDUCTION
COULD BE ATTRIBUTED TO LOCAL IRRADIATION EFFECTS ON
THE LIMB, AND THE REMAINING 48% OF THE RETARDATION
WAS ASCRIBED TO SYSTEMIC IRRADIATION EFFECTS. THE
SYSTEMIC RESPONSE DID NOT APPEAR TO BE DEPENDENT UPON
THE MASS OF TISSUE IRRADIATED, NOR UPON THE INDUCTION
OF POSTIRRADIATION PARTIAL INANITION. HOWEVER, THE
REGION OF THE ANIMAL EXPOSED DID APPEAR TO BE
IMPORTANT. BY EXPOSING VARIOUS REGIONS OF THE
BODY, THE SYSTEMIC RESPONSE WAS SUBDIVIDED INTO
ABSCOPAL COMPONENTS. HEAD, ABDOMEN AND THORAX
IRRADIATION YIELDED 42%, 40% AND 18%,
RESPECTIVELY, OF THE TOTAL SYSTEMIC EFFECT. THE
LOCAL AND ABSCOPAL RESPONSES APPEAR TO BE ADDITIVE
RATHER THAN SYNERGISTIC, WITH THE TOTAL RADIATION
EFFECT THE RESULTANT SUM OF THE ABSCOPAL AND LOCAL
COMPONENTS. (AUTHOR) (U)

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AD- 624 934 6/18
AEROSPACE TECHNOLOGY DIV LIBRARY OF CONGRESS WASHINGTON D
C

EFFECT OF IONIZING RADIATION ON ANIMALS AND PLANTS, (U)

DEC 65 22P SMITH, JANICE L. ;
REPT. NO. ATD-65-110
MONITOR: TT , 65-64828

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM AKADEMIYA NAUK SSSR.
INSTITUT GENETIKI. TRUDY, V32 1965.

DESCRIPTORS: (*RADIOBIOLOGY, ABSTRACTS), (*ANIMALS,
RADIATION EFFECTS), (*PLANTS(BOTANY), RADIATION
EFFECTS), GAMMA RAYS, X RAYS, NEUTRONS, METABOLISM,
SEEDS, ETHYLENIMINES, EMBRYOS, CHLOROPHYLLS, MUTATIONS,
PROTEINS, MAMMALS, BLOOD, TESTES, AGING(PHYSIOLOGY),
REPRODUCTIVE SYSTEM, TISSUES(BIOLOGY), PATHOLOGY,
ESTROGENS, ADRENAL CORTEX, AMINES, CHROMOSOMES, LIVER,
MICE (U)

CONTENTS: EFFECT OF CELLULAR METABOLIC
REGULATORS ON GAMMA-IRRADIATED BARLEY SEED; EFFECT
OF CULTIVATION CONDITIONS AND MATURITY ON GAMMA-
IRRADIATED BARLEY; EFFECT OF ETHYLENIMINE ON
NEUTRON-IRRADIATED BARLEY; EMBRYONIC SELECTION AND
CHLOROPHYLL MUTATION IN IRRADIATED BARLEY; PROTEIN
METABOLISM DISTURBANCES IN ANIMALS EXPOSED TO X-
RAYS; RADIOSENSITIVITY OF VARIOUS MAMMALIAN STRAINS
AND SPECIES; RADIOSENSITIVITY OF PERIPHERAL BLOOD
IN VARIOUS ANIMAL GENOTYPES; DAMAGE TO TESTES OF
MICE IRRADIATED IN EMBRYO; RBE BASED ON TESTICULAR
DAMAGE AND DOMINANT LETHAL GAMETE MUTATIONS IN MICE;
AGE AND RADIOSENSITIVITY IN MICE; TESTICULAR
RADIOSENSITIVITY IN NEWBORN MICE; REACTIVITY OF
VARIOUS TYPES OF TISSUE TO IRRADIATION AND
DIETHYLSTILBESTROL IN MICE; EFFECT OF A CHEMICAL
PROTECTOR (CO) ON SURVIVAL AND INTERNAL PATHOLOGY
IN MICE EXPOSED TO X-RAYS; EFFECT OF ESTROGENS
AND RADIATION ON ADRENAL CATECHOL AMINE METABOLISM;
CHEMICAL PROTECTION OF RABBIT SPERMATAZOA FROM
GENETIC RADIATION DAMAGE; EFFECT OF IONIZING
RADIATION ON ADRENAL CORTEX FUNCTION IN MICE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 625 949

6/18

YOKOHAMA MUNICIPAL UNIV (JAPAN) FACULTY OF MEDICINE

THE EFFECT OF COBALT-60 GAMMA RADIATION ON THE
CENTRAL NERVOUS SYSTEM.

(U)

DESCRIPTIVE NOTE: SEMI-ANNUAL REPT. 4 AUG 64-3 FEB 65,

FEB 65

10P

TAUYA, AKIRA ;

CONTRACT: DA-CRD-AG-S92-544-64-G24

MONITOR: ARDG(FE) ,

J-223

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CENTRAL NERVOUS SYSTEM, RADIATION),
(*RADIATION EFFECTS, CENTRAL NERVOUS SYSTEM), BRAIN,
GAMMA RAYS, X RAYS, RADIATION DOSAGE, WHOLE BODY
IRRADIATION, PATHOLOGY, ELECTROENCEPHALOGRAPHY,
JAPAN

(U)

DIFFERENT SENSITIVITY TO THE IONIZING RADIATION ON
THE VARIOUS PARTS OF THE BRAIN WERE STUDIED,
ELECTROENCEPHALOGRAPHICALLY. BETWEEN THE FRONTAL
CORTEX AND THE HIPPOCAMPUS, DIFFERENT TRANSITION OF
THE SLEEPY STAGE WAS DEMONSTRATED, SUGGESTING
DISSOCIATED RESPONSE IN THESE REGIONS, BY IRRADIATION
OVER 1000R. SUBCORTICAL STRUCTURE IS REMAINED TO
BE STUDIED FOR FUTURE INVESTIGATION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 627 069 6/18

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EFFECT OF IONIZING RADIATION ON THE HEART; REACTION
OF THE HEART IN NORMAL CONDITIONS TO RADIATION, (U)

DEC 65 22P ANTONYAN, S. G. ;

REPT. NO. FTD-TT-65-1082

MONITOR: TT , 65-60359

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF
AKADEMIYA NAUK ARMYANSKOI SSR, EREVAN. IZVESTIYA.
BIOLOGICHESKIE NAUKI V17 N7 P45-54 1964.

DESCRIPTORS: (*HEART, RADIATION EFFECTS), (*RADIATION,
HEART), REVIEWS, CARDIOVASCULAR SYSTEM, RADIATION
DOSAGE, X RAYS, GAMMA RAYS, RADIATION, RADIATION
SICKNESS, AUTONOMIC NERVOUS SYSTEM, HEMORRHAGE,
NECROSIS, PATHOLOGY, ELECTROCARDIOGRAPHY, HISTOLOGY,
METABOLISM, ELECTROPHYSIOLOGY, MORPHOLOGY(BIOLOGY),
EPINEPHRINE, ACETYLCHOLINE (U)

TRANSLATION OF RUSSIAN RESEARCH: EFFECT OF IONIZING
RADIATION ON THE HEART; REACTION OF THE HEART IN NORMAL
CONDITIONS TO RADIATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 627 287 6/5

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

THE ABSORPTION OF NONFERROUS METALS IN IRON
DEFICIENCY,

(U)

DEC 64 4P POLLACK, SIMEON ; GEORGE, JAMES
N. ; REBA, RICHARD C. ; KAUFMAN, RICHARD M. ;
CROSBY, WILLIAM H. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*IRON, NUTRITIONAL DEFICIENCY DISEASES),
(*ABSORPTION(BIOLOGICAL), METALS), DIET, TRANSPORT
PROPERTIES, METABOLISM, HEMORRHAGE, COBALT, MANGANESE,
CESIUM, MAGNESIUM, MERCURY, CALCIUM, COPPER, ZINC, RA(U)

THE INTESTINAL ABSORPTION OF COBALT AND MANGANESE
WAS INCREASED IN RATS RENDERED IRON DEFICIENT BY
BLEEDING AND DIET. THE INTESTINAL ABSORPTION OF
CESIUM, MAGNESIUM, MERCURY, CALCIUM, AND COPPER WAS
NOT INCREASED IN RATS CONSUMING AN IRON-DEFICIENT
DIET BUT WAS UNCHANGED IN BLED RATS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 627 292 6/18 6/3
WALTER REED ARMY MEDICAL CENTER WASHINGTON D C

RADIATION-INDUCED PREMATURE AGING IN LEAVES AND
AUTUMNAL EVENTS IN NATURE, (U)

MAR 65 21P KREBS, ADOLPH T. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN BEITRAGE ZUR BIOLOGIE
DER PFLANZEN V41 P157-74 1965. COPIES TO DDC USERS
ONLY.

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, AGING(PHYSIOLOGY)),
(*AGING(PHYSIOLOGY), RADIATION EFFECTS),
(*PLANTS(BOTANY), RADIATION EFFECTS), COLORS, PERIODIC
VARIATIONS, ORGANIC PIGMENTS, METABOLISM, CHLOROPHYLLS,
RADIATION DOSAGE, MAMMALS, GROWTH SUBSTANCES (U)

IN CONSIDERING THE REPORTED FINDINGS IN PLANTS,
PLANT CELLS AND LEAVES AND RELATING THEM TO PRESENT
BOTANICAL THEORIES ON AGING OF PLANT SYSTEMS IN
AUTUMN AND TO EXISTING HYPOTHESES AND THEORIES ON
RADIATION 'AGING' AND NATURAL AGING IN MAMMALS, IT
BECOMES EVIDENT THAT THERE ARE BRIDGES CONNECTING
'EARLY' AND NATURAL FALL EVENTS. AS IN MAMMALIAN
RADIOBIOLOGY, WHERE RADIATION 'AGING' AND SPONTANEOUS
AGING SHARE CERTAIN BASIC MECHANISMS, SO ALSO HERE IN
THE PLANT KINGDOM RADIATION-INDUCED AGING AND NATURAL
AGING HAVE A COMMON DENOMINATOR. FINAL PROOF OF
THIS RELATIONSHIP AND CONFIRMATION OF THE ROLE OF
AUXIN IN THE AGING PROCESS AND IN RADIOBIOLOGICAL
PHENOMENA WOULD BE A VALUABLE CONTRIBUTION TO THE
DISCUSSIONS ON AGING, AND WOULD DEMONSTRATE AT THE
SAME TIME THE STIMULUS AND IMPETUS OF THE AUXIN
STUDIES IN THE LATE TWENTIES AND EARLY THIRTIES ON
FURTHER RESEARCH IN BOTANY, RADIOBIOLOGY AND
GERONTOLOGY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 627 569 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

SYSTEMIC FACTOR IN RECOVERY OF RAT KIDNEY FROM X
IRRADIATION: THYMIDINE-H3 INCORPORATION STUDIES, (U)

DEC 65 25P WACHTEL, LOUIS W. ; PHILLIPS,
THEODORE L. ; COLE, LEONARD J. ;
REPT. NO. USNRDL-TR-945
MONITOR: NAVMED , MR005.08-1200-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*KIDNEYS, RADIATION EFFECTS), (*RADIATION
EFFECTS, KIDNEYS), X RAYS, THYMIDINES, TRITIATED
COMPOUNDS, AUTORADIOGRAPHY, WHOLE BODY, PARTIAL BODY
IRRADIATION, RADIOLOGICAL, HUMAN BODY,
GROWTH(PHYSIOLOGY), MITOSIS, RECOVERY, RATS (U)

THE EFFECT OF X IRRADIATION ON THYMIDINE-H3
INCORPORATION INTO KIDNEY CELLS (THYMIDINE INDEX)
WAS MEASURED AT 4-8 HOUR INTERVALS UP TO 96 HOURS IN
UNILATERALLY NEPHRECTOMIZED FEMALE WEANLING RATS.
A SHARP DROP IN THE THYMIDINE INDEX OCCURRED DURING
THE FIRST 16 HOURS AFTER THE KIDNEY ONLY WAS
IRRADIATED WITH 1000 RAD, AND ALSO AFTER THE KIDNEY
WAS IRRADIATED WITH 125 RAD OR 500 RAD AT THE SAME
TIME THE BODY RECEIVED 500 RAD. IRRADIATION OF THE
BODY, BUT WITH THE KIDNEY COMPLETELY SHIELDED HAD NO
APPARENT INHIBITORY EFFECT ON KIDNEY THYMIDINE
INCORPORATION. THE ABILITY OF THE IRRADIATED
KIDNEY TO INCORPORATE THYMIDINE REAPPEARED IN 24
HOURS IF THE REMAINDER OF THE BODY WAS NOT
IRRADIATED. WHEN BOTH THE BODY AND THE KIDNEY WERE
IRRADIATED, RECOVERY OF THYMIDINE UPTAKE DEPENDED ON
THE AMOUNT OF RADIATION RECEIVED BY EACH. AN
EXPLANATION FOR THE ABOVE OBSERVATIONS IS OFFERED ON
THE BASIS OF A POSTULATED SYSTEMIC FACTOR, THE
FORMATION OR INDUCTION OF WHICH COULD BE AFFECTED BY
RADIATION AND WHICH IS ESSENTIAL FOR THYMIDINE
INCORPORATION IN THE KIDNEY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 877 6/18
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION LABS OTTAWA
(ONTARIO)

THE EFFECT OF DAMAGE ON CELL CONDUCTIVITY IN
ELECTRONIC CELL SIZE DISTRIBUTION. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAY 65 4P VITTORIO, P. V. ;
REPT. NO. DCBRL-TN-65-7

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN CANADIAN JOURNAL OF
PHYSIOLOGY AND PHARMACOLOGY V43 P1027-9 1965. COPIES
TO DDC USERS ONLY.

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, LYMPHOCYTES),
(*LYMPHOCYTES, COUNTING METHODS), (*CELL, RADIATION
EFFECTS), BLOOD COUNTS, ELECTRONIC, X RAYS, BONE MARROW,
MEMBRANES(BIOLOGY), RADIATION DOSAGE, RATS, IN VITRO
ANALYSIS (U)

IDENTIFIERS: SIZES(DIMENSIONS), TRANSIENT RADIATION
EFFECTS(ELECTRONICS) (U)

USING A COULTER COUNTER, THE STUDY WAS CARRIED
OUT TO DETERMINE WHETHER CELL MEMBRANE INJURY FROM
IRRADIATION OR BY MECHANICAL MEANS CHANGED CELL
CONDUCTIVITY TO SUCH AN EXTENT THAT FALSE CELL SIZE
DISTRIBUTION CURVE WOULD RESULT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 629 512 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

X-RAY INDUCED GLOMERULOSCLEROSIS IN RATS:
MODIFICATION OF LESION BY FOOD RESTRICTION,
UNINEPHRECTOMY, AGE, (U)

FEB 66 20P WACHTEL, L. W. ; COLE, L. J. ;
ROSEN, V. J. , JR. ;
REPT. NO. USNRDL-TR-977,
MONITOR: NAVMED , MR005.08-1200-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, KIDNEYS), (*KIDNEYS,
RADIATION EFFECTS), PATHOLOGY, FOOD, DIET,
AGING(PHYSIOLOGY), X RAYS, RADIATION INJURIES,
GROWTH(PHYSIOLOGY), BODY WEIGHT, BLOOD VESSELS,
DEOXYRIBONUCLEIC ACIDS, RADIATION DOSAGE, EXCISION,
RATS (U)

THE DEVELOPMENT OF GLOMERULOSCLEROSIS WAS MEASURED
IN THE KIDNEYS OF RATS UNDER VARIOUS CONDITIONS OF
IRRADIATION AND GROWTH. WEANLING RATS SHOWED
KIDNEYS WERE IRRADIATED DIRECTLY WITH 1,000 RAD OR 2,
000 RAD DEVELOPED GLOMERULOSCLEROTIC LESIONS IN 2
MONTHS; ONE-YEAR OLD RATS SHOWED NO EVIDENCE OF
LESIONS 2 MONTHS AFTER IRRADIATION WITH 2,000 RAD.
IN THE WEANLING RAT THE RAPIDITY OF DEVELOPMENT AND
SEVERITY OF THE GLOMERULOSCLEROTIC LESIONS WERE
INCREASED BY GROWTH OR ENLARGEMENT OF THE KIDNEY
SUBSEQUENT TO IRRADIATION, AND WERE SLOWED BY GROWTH
RETARDATION ARTIFICIALLY PRODUCED THROUGH LOW-FOOD
INTAKE. THE INDUCTION OF GLOMERULOSCLEROSIS BY X-
IRRADIATION OF THE KIDNEY IS BELIEVED TO BE A LATENT
RESULT OF DAMAGE TO THE KIDNEY'S VASCULAR SYSTEM, AND
THAT EFFECTS OF THIS DAMAGE ARE ACCENTUATED IN THE
GROWING KIDNEY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 629 865 6/18 6/16 6/5
DEPARTMENT OF THE NAVY WASHINGTON D C

THE EFFECT OF MICROWAVES ON THE FUNCTIONAL STATE OF
NERVE, (U)

66 13P KAMENSKII, YU. I. ;
REPT. NO. TRANSLATION-2121,
MONITOR: TT , 66-60757

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DEISTVIE MIKROVOLN NA
FUNKSIONALNOE SOSTOIANIE NERVA, TRANS. OF BIOFIZIKA
(USSR) V9 N6 P695-700 1964.

DESCRIPTORS: (*RADIOBIOLOGY, MICROWAVES), (*NERVES,
MICROWAVES), (*MICROWAVES, NERVOUS SYSTEM), AMPHIBIANS,
PHYSIOLOGY, USSR, THRESHOLDS(PHYSIOLOGY), THERMAL
PROPERTIES (U)
IDENTIFIERS: MICROWAVE EFFECTS(BIOLOGICAL) (M)

THE RESULTS ARE DESCRIBED OF STUDIES OF THE
FUNCTIONAL STATE OF FROG NERVE (N. ISCHIADICUS):
OF THE STIMULUS THRESHOLDS, OF THE VELOCITIES OF
STIMULUS CONDUCTION, OF THE ABSOLUTE AND RELATIVE
REFRACTORY PHASES, OF THE AMPLITUDE OF THE ACTION
POTENTIALS--UPON IRRADIATION BY MICROWAVES OF NON-
THERMAL INTENSITY DURING CONTINUOUS AND PULSED
REGIMES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 630 103 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EFFECTS OF TOTAL-BODY X IRRADIATION ON PERITONEAL AND
CIRCULATING LEUCOCYTES OF MICE, (U)

JAN 66 26P KORNFELD, LOTTIE ; GREENMAN,
VIVIAN ;
REPT. NO. USNRDL-TR-966,
MONITOR: NAVMED , MR005.08-1200-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LEUKOCYTES, RADIATION EFFECTS), (*X RAYS,
WHOLE BODY IRRADIATION), PERITONEUM, MICE, BLOOD
CIRCULATION, CELLS(BIOLOGY), PHAGOCYTES (U)

TOTAL-BODY X IRRADIATION OVER A WIDE RANGE OF
DOSES WAS FOUND TO ALTER THE NUMBER AND DISTRIBUTION
OF CELLS IN THE PERITONEAL CAVITY OF UNSTIMULATED
LAF-1 MICE. UNIRRADIATED CONTROLS YIELDED 5-7 X
10 TO THE 6TH POWER MONONUCLEAR CELLS, ABOUT 30% OF
WHICH WERE MACROPHAGES AND 70% SMALL AND MEDIUM
LYMPHOCYTES. FOLLOWING EXPOSURE TO SUBLETHAL X
RAY DOSES (90-590 R), MACROPHAGE COUNTS WERE
ESSENTIALLY UNALTERED FOR TWO WEEKS BUT DECLINED
SLIGHTLY DURING THE 3RD WEEK AFTER 390-590 R.
FOLLOWING A MIDDLETHAL DOSE (690 R), THE NUMBER
OF MACROPHAGES WAS UNCHANGED FOR ONE WEEK BUT FELL TO
ABOUT 50% OF THE NORMAL VALUE BY 21 DAYS
POSTIRRADIATION. AFTER LETHAL IRRADIATION (790-
1190 R), MACROPHAGE COUNTS REMAINED UNALTERED FOR 3
DAYS BUT DECREASED ON THE 7TH DAY. THE NUMBER OF
LYMPHOCYTES IN THE PERITONEAL CAVITY DECREASED
SHARPLY WITHIN 24 HOURS AFTER EVERY DOSE EMPLOYED AND
THEN DECLINED FURTHER AT A MORE GRADUAL RATE. BOTH
THE INITIAL AND THE SUBSEQUENT DISAPPEARANCE OF
LYMPHOCYTES INCREASED IN SEVERITY WITH INCREASING
EXPOSURE. DURING THE FIRST WEEK POSTIRRADIATION, A
LINEAR RELATION EXISTED BETWEEN THE PERCENTAGE OF
LYMPHOCYTES IN THE PERITONEAL CELL POPULATION AND THE
X RAY DOSE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 630 870 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AN ULTRASTRUCTURAL STUDY OF THE DEVELOPMENT OF
RADIATION INJURY IN THE LUNG,

(U)

FEB 66 23P PHILLIPS, THEODORE L. ;
REPT. NO. USNRDL-TR-973,
MONITOR: NAVMED , MR005.08-5201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LUNG, *RADIATION INJURIES), RADIATION
DOSAGE, COLLAGEN, CELLS(BIOLOGY), MEMBRANES(BIOLOGY),
CAPILLARIES, X RAYS, TISSUES(BIOLOGY), ELECTRON
MICROSCOPY

(U)

RADIATION DOSES OF 2000 R WERE GIVEN TO THE LEFT
HEMITHORAX OF A GROUP OF 25 RATS. AT INTERVALS OF
FROM ONE HOUR TO ONE YEAR FOLLOWING IRRADIATION
SECTIONS OF THE LUNG WERE EXAMINED WITH THE ELECTRON
MICROSCOPE. THE INITIAL SITE OF RADIATION DAMAGE
APPEARS TO LIE CHIEFLY IN THE ENDOTHELIUM. THE
ENDOTHELIUM IS SLOUGHED AND THE ORIGINAL ENDOTHELIAL
SPACE IS REPLACED BY COLLAGEN AND MAST CELL
INFILTRATES. SOME CAPILLARIES ARE RECANALIZED BY
NEW ENDOTHELIAL CELLS. EVENTUALLY THESE
CAPILLARIES ATTAIN AN APPEARANCE SIMILAR TO THAT OF
THE ORIGINAL CAPILLARY BUT WITH A SLIGHTLY THICKENED
ENDOTHELIUM AND BASEMENT MEMBRANE. IF THE ORIGINAL
CAPILLARY ARCHITECTURE IS NOT MAINTAINED, MASSIVE
FIBROSIS RESULTS. THE MAST CELL PARTICIPATES
EXTENSIVELY IN THE REPAIR OF THE RADIATION DAMAGE AND
IS CLOSELY ASSOCIATED WITH COLLAGEN AND NEW CAPILLARY
FORMATION. IT IS STRESSED THAT THE DEGREE OF
DAMAGE OCCURRING AFTER A GIVEN DOSE OF IRRADIATION
VARIES WIDELY AND THAT THESE OBSERVATIONS WERE MADE
ON ONLY SMALL SAMPLES OF LUNGS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 632 282 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

DIFFERENTIAL SENSITIVITY OF CIRCULATING AND
PERITONEAL MONONUCLEAR CELLS OF MICE TO TOTAL-BODY X
IRRADIATION, (U)

MAY 66 18P KORNFELD, LOTTIE ; GREENMAN,
VIVIAN ;
REPT. NO. USNRDL-TR-999,
PROJ: DA-3A-014501-A71-H,
MONITOR: NAVMED , MR005.08-1200-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LYMPHOCYTES, *RADIATION EFFECTS),
LEUKOCYTES, X RAYS, PERITONEUM, WHOLE BODY IRRADIATION,
PHAGOCYTES, SENSITIVITY, MICE (U)

DOSE-RESPONSE CURVES OBTAINED 1 AND 3 DAYS AFTER
EXPOSURE TO TOTAL-BODY X IRRADIATION INDICATE THAT
THE MONONUCLEAR CELLS IN THE CIRCULATING BLOOD AND IN
THE PERITONEAL CAVITY OF LAF SUB1 MICE MAY BE
ARRANGED IN THE FOLLOWING ORDER OF DECREASING
SENSITIVITY: CIRCULATING LYMPHOCYTES, SMALL
PERITONEAL LYMPHOCYTES, MEDIUM PERITONEAL
LYMPHOCYTES, PERITONEAL MACROPHAGES. HOWEVER, ON
THE 3RD DAY POSTIRRADIATION, THE CURVE OF THE SMALL
PERITONEAL LYMPHOCYTES CLOSELY APPROACHED THAT OF THE
CIRCULATING LYMPHOCYTES. IT IS SUGGESTED THAT THE
GREATER SENSITIVITY TO IRRADIATION OF SMALL THAN OF
MEDIUM PERITONEAL LYMPHOCYTES IS NOT DUE TO
ENVIRONMENTAL FACTORS BUT TO AS YET UNIDENTIFIED
DIFFERENCES IN THE CELLS. ON THE OTHER HAND, THE
GREATER LOSS OF CIRCULATING LYMPHOCYTES THAN OF SMALL
PERITONEAL LYMPHOCYTES 1 DAY AFTER X RAY EXPOSURE
MAY MERELY REFLECT MORE EFFICIENT REMOVAL OF DAMAGED
CELLS FROM THE CIRCULATION THAN FROM THE PERITONEAL
CAVITY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 637 574 6/18 6/1 6/15 6/20
CHICAGO UNIV ILL TOXICITY LAB

EFFECTS OF X-IRRADIATION ON THE HEXOBARBITAL
METABOLIZING ENZYME SYSTEM OF RAT LIVER MICROSOMES. (U)

DESCRIPTIVE NOTE: REPT. FOR 1 DEC 65-31 MAY 66.
JUN 66 33P YAM, KEI-MING ; DUBOIS, K. P.

;
CONTRACT: AF 41(609)-2977,
PROJ: AF-7757,
TASK: 775702,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, ENZYMES), (*ENZYME
INHIBITORS, X RAYS), (*ENZYMES, BIOSYNTHESIS),
(*HYPNOTICS AND SEDATIVES, METABOLISM), DETOXIFICATION,
BARBITURATES, OXIDATION, MICROSOMES, LIVER,
REGENERATION, EXCISION, SUBLETHAL DOSAGE, TOXICITY,
HYPNOSIS, SLEEP, HEAD(ANATOMY), MALES, FEMALES, RATS (U)
IDENTIFIERS: HEXOBARBITAL (U)

A STUDY WAS CONDUCTED ON THE INFLUENCE OF X-RAY
ON THE DEVELOPMENT OF A HEPATIC MICROSOMAL OXIDASE
THAT CATALYZES THE OXIDATIVE DETOXIFICATION OF
HEXOBARBITAL. EXPOSURE OF 23-DAY OLD MALE RATS TO
400 R OF X-RAY COMPLETELY INHIBITED THE RAPID
INCREASE IN ENZYME ACTIVITY THAT NORMALLY OCCURS AT
THIS AGE IN MALE RATS. AFTER THREE WEEKS FOLLOWING
RADIATION EXPOSURE, REVERSAL OF THE INHIBITION WAS
OBSERVED. EXPOSURE OF ONLY THE HEADS OF MALE RATS
ALSO RESULTED IN INHIBITION OF THE ENZYME DEVELOPMENT
IN THE LIVER, AND HYPOPHYSECTOMIZED, UNIRRADIATED
RATS FAILED TO EXHIBIT THE NORMAL INCREASE IN ENZYME
ACTIVITY. THESE FINDINGS RESEMBLED THE RESULTS OF
PREVIOUS INVESTIGATIONS IN THIS LABORATORY ON OTHER
MICROSOMAL ENZYMES AND PROVIDED FURTHER EVIDENCE THAT
RADIATION ACTS ON SOME PROCESS INVOLVED IN THE
SYNTHESIS OF INCREASED ENZYME ACTIVITY IN THE LIVERS
OF MALE RATS THROUGH AN INDIRECT MECHANISM PROBABLY
INVOLVING HORMONAL REGULATION OF MICROsome ENZYME
SYNTHESIS. X-IRRADIATION (400 R) ALSO
INHIBITED THE SYNTHESIS OF THE HEXOBARBITAL OXIDIZING
ENZYME IN THE LIVER OF PARTIALLY HEPATECTOMIZED MALE
RATS. A PROLONGED DURATION OF ACTION OF
HEXOBARBITAL IN IRRADIATED YOUNG MALE RATS AND
HEPATECTOMIZED, ADULT RATS DEMONSTRATED THE IN VIVO
EFFECTS OF INHIBITION OF ENZYME SYNTHESIS ON DRUG
METABOLISM. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 639 192 6/18
SOUTHWEST RESEARCH INST SAN ANTONIO TEX DEPT OF PHYSICAL
AND BIOLOGICAL SCIENCES

THE EFFECTS OF IONIZING RADIATION ON OXIDATION STATES
OF BIOLOGICAL SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT., JUL 65-JUL 66.
JUL 66 54P JOHNSON, DONALD E. ;
REGISTER, JAMES W. , JR. ; STOREY, WILLIAM H. ,
JR. ; BOLLINGER, JAMES N. ;
CONTRACT: AF 41(609)-2816,
PROJ: SWRT-05-1755

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, OXIDATION), (*ELECTRON
PARAMAGNETIC RESONANCE, MITOCHONDRIA), RADIATION
EFFECTS, ENZYMES, CYTOCHROME OXIDASE, OXIDOREDUCTASES,
MOLYBDENUM, IRON, OXIDATION REDUCTION REACTIONS, MICE (U)

CHANGES IN THE OXIDATION STATE OF BIOLOGICAL
SYSTEMS AS A FUNCTION OF IONIZING RADIATION WERE
STUDIED BY MEASURING THE ACTIVITY OF TWO
METALLOENZYMES AND BY EVALUATING ELECTRON SPIN
RESONANCE SIGNALS PRODUCED BY MITOCHONDRIA. THE
SPECIFIC ACTIVITY OF LIVER CYTOCHROME OXIDASE AND
XANTHINE OXIDASE WAS NOT ALTERED IN MICE EXPOSED TO
TOTAL-BODY IRRADIATION OF 150 TO 22,500 RAD. IRON
(FE(II)), MOLYBDENUM (MO(V)), AND FREE
RADICALS (PROBABLY FLAVOQUINONES) YIELDED THE
MOST PREDOMINANT SIGNALS IN ELECTRON SPIN RESONANCE
ANALYSIS OF LIVER MITOCHONDRIA ISOLATED FROM BOTH
IRRADIATED AND CONTROL MICE. BOTH THE ELECTRON
SPIN RESONANCE AND CYTOCHROME OXIDASE DATA SUGGEST
THAT THE ELECTRON TRANSPORT SYSTEM IS NOT DAMAGED BY
THE LEVELS OF IONIZING RADIATION USED IN THIS
INVESTIGATION. THE FACT THAT MOLYBDENUM ELECTRON
SPIN RESONANCE SIGNALS OCCUR IN THE MITOCHONDRIAL
PREPARATIONS AND THAT PRELIMINARY DATA INDICATE THIS
METAL UNDERGOES OXIDATIVE CHANGES DUE TO RADIATION
INDICATES THE NEED FOR MORE EXTENSIVE INVESTIGATION
OF THE RELATIONSHIP BETWEEN THIS METAL AND IONIZING
RADIATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 639 758 6/18 20/8 11/9
TEXAS NUCLEAR CORP AUSTIN

EXPERIMENTAL FAST NEUTRON DOSIMETRY AND LD 50/30
STUDIES IN MICE. (U)

DESCRIPTIVE NOTE: FINAL REPT.

AUG 66 53P

CONTRACT: AF 41(609)-2947,

PROJ: AF-7757,

TASK: 775704,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*NEUTRON SCATTERING, *RADIOBIOLOGY),
(*PLASTICS, NEUTRON SCATTERING), FAST NEUTRONS,
DOSIMETERS, LETHAL DOSAGE, POLYETHYLENE PLASTICS, NYLON,
DOSE RATE, NEUTRON FLUX, NEUTRON DETECTORS, GAMMA RAYS,
MICE (U)

THE REPORT CONCERNS EXPERIMENTAL 14 MEV NEUTRON
DOSIMETRY USING MICE AS NEUTRON SCATTERING SAMPLES
AND AN LD 50/30 STUDY OF MICE USING 14 MEV
NEUTRONS AND 2 MEV X-RAYS. THE IRRADIATIONS FOR
THE LD 50/30 STUDY WERE CARRIED OUT USING COMPUTED
NEUTRON-FLUX-TO-DOSE VALUES. THE EXPERIMENTAL
NEUTRON DOSIMETRY STUDY IS DESCRIBED, NOT ONLY FOR
MICE BUT FOR THREE TISSUE-EQUIVALENT TYPE
MATERIALS: POLYETHYLENE, NYLON, AND SHONKA
PLASTIC. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 640 316 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE RESPONSE OF ERYTHROPOIETIC STEM CELLS OF MICE TO
IRRADIATION WITH FISSION NEUTRONS, (U)

AUG 66 31P KREBS, J. S. ;
REPT. NO. USNRDL-TR-1059,
MONITOR: NAVMED MR005.08-0009

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*FISSION NEUTRONS, *RADIOBIOLOGY),
(*HEMOPOIETIC SYSTEM, *RADIATION EFFECTS),
(*ERYTHROCYTES, RADIATION EFFECTS), CELLS(BIOLOGY), BONE
MARROW, RADIATION DOSAGE, MATHEMATICAL MODELS, MICE (U)

THE DESTRUCTION OF ERYTHROPOIETIC STEM CELLS BY
IRRADIATION WITH FISSION NEUTRONS WAS STUDIED IN
PLETHORIC C57 LEADEN MALE MICE BY MEASURING THE
INCORPORATION OF FE59 INTO ERYTHROCYTES 48 HOURS
AFTER A DOSE OF ERYTHROPOIETIN. THE SURVIVAL OF
STEM CELLS IN MICE EXPOSED TO SINGLE DOSES OF
NEUTRONS AT 37 RAD/MIN. FOLLOWED THE SINGLE-HIT
MULTI-TARGET MODEL OF RADIATION INJURY TO CELLS. D
IS DOSE, D SUB 0 IS 37% DOSE, AND E IS TARGET
MULTIPLICITY. D SUB 0 WAS A CONSTANT, EQUAL TO 27.8
RADS FOR ALL ANIMALS, BUT E VARIED FROM 1 TO 4 IN
DIFFERENT ANIMALS. THE SURVIVAL OF STEM CELLS IN
MICE EXPOSED TO SINGLE DOSES OF NEUTRONS AT 1.75 RAD/
MIN. FOLLOWED THE SINGLE-HIT MULTI-TARGET MODEL, WITH
D SUB 0 = 26 RAD, FOR THOSE ANIMALS FOR WHICH E
= 1, BUT ANIMALS WITH E > 1 DID NOT FIT THE MODEL.
THE SURVIVAL OF STEM CELLS IN MICE EXPOSED TO 3
DOSES AT 37 RAD/MIN. AT INTERVALS OF 10-12 HOURS ALSO
FOLLOWED THE SINGLE-HIT MULTI-TARGET MODEL, WITH MEAN
D SUB 0 = 26 RAD, AND A DISTRIBUTION OF VALUES OF
E SIMILAR TO THAT IN THE SINGLE DOSE. THE DATA
STRONGLY IMPLY THAT THE LOSS OF STEM CELLS FOLLOWS
THE MULTI-TARGET MODEL, BUT THAT E, INSTEAD OF
BEING A CONSTANT, IS A BASIC BIOLOGICAL VARIABLE OF
THE RESPONSE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 643 434 6/18
MELPAR INC FALLS CHURCH VA

EFFECTS OF RADIO-FREQUENCY IRRADIATION ON THE ENZYMES
OF BEEF MUSCLE TISSUE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT., 13 APR 64-13
APR 65,

DEC 65 60P NELSON, S. ;
CONTRACT: DA-19-129-AMC-262(N)
PROJ: DA-1K025601A033
MONITOR: FD 33

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, RADIOBIOLOGY),
(*PEPTIDE HYDROLASES, RADIOBIOLOGY), (*BEEF, PEPTIDE
HYDROLASES), (*RADIOBIOLOGY, BEEF), TISSUES(BIOLOGY),
RADIOFREQUENCY, PURIFICATION, BIOASSAY, PH FACTOR,
TEMPERATURE, LIVER, ENZYMES (U)

THE OBJECTIVE OF THE PROGRAM IS TO STUDY THE
CONDITIONS NECESSARY TO INACTIVATE THE NATURAL
PROTEOLYTIC ENZYMES OF BEEF MUSCLE TISSUE BY RADIO-
FREQUENCY ENERGY. PRELIMINARY EXPERIMENTS USING
PURIFIED PROTEOLYTIC ENZYMES ISOLATED FROM BEEF LIVER
TISSUE WERE CONDUCTED TO DETERMINE THE EFFECTS OF
VARIOUS R-F PARAMETERS. FROM 4 DESIGN STUDIES, IT
COULD NOT BE CONCLUSIVELY DETERMINED AS TO WHAT THE
LEVELS OF THE MAIN FACTORS AND THE INTERACTION
FACTORS NECESSARY FOR MAXIMUM INACTIVATION ARE. IT
HAS BEEN SHOWN, HOWEVER, THAT A SET CONDITION ABOUT
40% INACTIVATION OF THE PROTEOLYTIC ENZYMES CAN BE
EFFECTED. R-F RADIATION EXPERIMENTS ON GROUND BEEF
TISSUE GAVE INCONCLUSIVE RESULTS. CHIEF PROBLEM
AREA LIES IN THE FACT THAT THE EXTRACTION AND
PURIFICATION PROCESS DOES NOT YIELD CONSISTENT
RESULTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 644 451 6/18 20/8
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

PROTON DEPTH-DOSE DOSIMETRY, (U)

AUG 65 21P MITCHELL, JOHN C. ; DALRYMPLE,
GLENN V. ; WILLIAMS, GWILYM H. ; HALL, JAMES D. ;
MORGAN, IRA L. ;
REPT. NO. SAM-TR-65-262
TASK: 775701 , 775704

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN RADIATION RESEARCH V28
N2 P390-405 JUN 1966.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH TEXAS
NUCLEAR CORP., AUSTIN.

DESCRIPTORS: (*RADIATION HAZARDS, SPACE FLIGHT),
(*PROTONS, *RADIOBIOLOGY), DOSIMETERS, PRIMATES,
RADIATION DOSAGE (U)
IDENTIFIERS: ALANINES (U)

GLASS ROD MICRODOSIMETERS AND ALANINE WERE
IRRADIATED WITH PROTON ENERGIES RANGING FROM 6.8 TO
400 MEV. EXPOSURES WERE MADE UNDER CONDITIONS OF
MINIMAL SCATTER AS WELL AS IN SEVERAL PHANTOMS WHICH
INCLUDED STATIONARY BLOCKS AND ROTATED LUCITE AND
MASONITE CYLINDERS. IN ADDITION TO THESE, TWO
SPECIALLY CONSTRUCTED PRIMATE PHANTOMS WERE
IRRADIATED IN THE SAME MANNER AS THE PRIMATES USED
FOR THE BIOLOGICAL EXPERIMENTS. THE DEPTH-DOSE
MEASUREMENTS ARE CONSIDERED IN LIGHT OF CALCULATIONS
MADE WITH A DIGITAL COMPUTER, AND THE CALCULATED
DEPTH-DOSE DISTRIBUTIONS IN REPRESENTATIVE TISSUE
PHANTOMS ARE PRESENTED FOR 32-MEV, 55-MEV, 138-
MEV, 250-MEV, AND 400-MEV PROTON EXPOSURES.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 645 979 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

SOVIET RESEARCH ON THE NEURAL EFFECTS OF
MICROWAVES.

(U)

DESCRIPTIVE NOTE: ATD WORK ASSIGNMENT NO. 79-67-1.
NOV 66 38P DODGE ,CHRISTOPHER ;KASSEL,
SIMON ;
REPT. NO. ATD-66-133
MONITOR: TT 67-60561

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: BASED ON SOVIET OPEN SOURCES PUR.
1952-66. REPT. ON SURVEYS OF FOREIGN SCIENTIFIC AND
TECHNICAL LITERATURE.

DESCRIPTORS: (*RADIOBIOLOGY, *ELECTROMAGNETIC
RADIATION), (*CENTRAL NERVOUS SYSTEM, RADIOBIOLOGY),
MICROWAVES, ELECTROPHYSIOLOGY, NEUROLOGY, RADIATION
INJURIES, MAGNETIC FIELDS, REFLEXES, BRAIN, NERVE CELLS,
IN VIVO ANALYSIS, LOW FREQUENCY, HYGIENE, THERAPY,
BIBLIOGRAPHIES, REVIEWS, USSR

(U)

THE PRIMARY PURPOSE OF THE REPORT IS TO OUTLINE
SOVIET RESEARCH ON THE EFFECT OF LOW-INTENSITY
MICROWAVE RADIATION ON THE CENTRAL NERVOUS SYSTEM OF
LIVING ORGANISMS, INCLUDING MAN. THERE ARE SIX
SECTIONS IN THE REPORT: (1) SCOPE OF EFFORT:
ORGANIZATIONS AND INDIVIDUAL RESEARCHERS; (2)
SUBJECT DEVELOPMENT; (3) SPECIFIC NEURAL
FUNCTIONS AND STRUCTURES; (4) IN VIVO NEURAL
EFFECTS; (5) NEURAL EFFECTS OF LOW-FREQUENCY
ELECTROMAGNETIC AND MAGNETIC FIELDS; (6)
CLINICAL, THERAPEUTIC, AND HYGIENIC ASPECTS. A
DISCUSSION SUMMARIZES IMPORTANT FACTS AND DEDUCTIONS
FROM THE FOREGOING SECTIONS AND SPECULATES ON THE
INTENSITY AND TYPE OF SOVIET RESEARCH EFFORTS IN
THIS AREA IN THE FUTURE. THE BIBLIOGRAPHY AT THE
END OF THE REPORT INCLUDES 42 ENTRIES.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 647 752 6/18 6/5
OAK RIDGE NATIONAL LAB TENN

THE RADIOBIOLOGY OF THE CANCER CELL,

(U)

JAN 59 24P UPTON, A. C. ;
MONITOR: SAM 59-22

UNCLASSIFIED REPORT

DESCRIPTORS: (*CANCER, *RADIOBIOLOGY), NEOPLASMS,
RADIATION EFFECTS, PATHOLOGY, METABOLISM,
GROWTH(PHYSIOLOGY), GENETICS, RADIATION INJURIES,
RADIOTHERAPY, MITOSIS, CHROMOSOMES, RADIATION HAZARDS, X
RAYS, RADIATION DOSAGE (U)
IDENTIFIERS: RADIATION TOLERANCE (U)

THROUGH STUDY OF THE EFFECTS OF IONIZING RADIATION,
FUNDAMENTAL INFORMATION HAS BEEN GAINED ABOUT THE
BIOLOGY OF NORMAL AND NEOPLASTIC CELLS AND ABOUT THE
PROCESS OF NEOPLASIA. A VARIETY OF DISTURRANCES
HAVE BEEN OBSERVED IN IRRADIATED CELLS, INCLUDING
ALTERATIONS IN METABOLISM, GROWTH, AND
DIFFERENTIATION, BUT EXISTING EVIDENCE SUGGESTS THAT
THE MOST SIGNIFICANT PRIMARY ACTION OF RADIATION IS
ON THE GENETIC APPARATUS OF THE CELL. THAT
RADIATION-INDUCED GENETIC EFFECTS MAY INITIATE TUMOR
FORMATION IS HIGHLY CONCEIVABLE; HOWEVER, SOME OTHER
MECHANISM SEEMS TO BE INVOLVED IN CERTAIN INSTANCES
OF RADIATION CARCINOGENESIS. WHATEVER THE
MECHANISM, THE DEVELOPMENT OF MALIGNANCY APPEARS TO
BE A COMPLEX, MULTISTAGE PROCESS. THE MATERIAL
BASIS FOR THE LARGE VARIATION IN RADIOSENSITIVITY
THAT EXISTS AMONG CELLS OF DIFFERENT TYPES IS STILL
POORLY UNDERSTOOD; HOWEVER, WITH INCREASING KNOWLEDGE
OF THE MODE OF ACTION OF RADIATION AND OF THE FACTORS
INFLUENCING THE RADIOSENSITIVITY OF THE CELL, WAYS
ARE BEING FOUND TO INCREASE, DECREASE, AND REPAIR
RADIATION INJURY. THESE ADVANCES HOLD PROMISE OF
PROVIDING MEANS OF ENHANCING THE EFFECTIVENESS OF
RADIOTHERAPY IN THE TREATMENT OF CANCER AND OF
REDUCING THE HAZARD OF RADIATION AS A CARCINOGENIC
AGENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 647 936 6/18 6/3
NORTHWESTERN UNIV EVANSTON ILL DEPT OF BIOLOGICAL
SCIENCES

DIURNAL VARIATION IN ORGANISMIC RESPONSE TO VERY WEAK
GAMMA RADIATION, (U)

66 9P BROWN, FRANK A. , JR.; PARK,
YOUNG H. ; ZENO, JOSEPH R. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN NATURE V211 N5051 P830-
3 AUG 20 1966.

SUPPLEMENTARY NOTE: SUPPORTED BY A CONTRACT WITH ONR,
AND GRANTS FROM NIH AND NSF.

DESCRIPTORS: (*RADIOBIOLOGY, *DIURNAL VARIATIONS), GAMMA
RAYS, METABOLISM, RESPONSE(BIOLOGY), BACKGROUND,
RADIOACTIVITY, OXYGEN CONSUMPTION, RHYTHM(BIOLOGY) (U)

AN EXPERIMENT WAS DESIGNED TO DETERMINE: (1)
WHETHER SMALL CHANGES IN LEVEL OF RADIATION HAVE ANY
MEASURABLE INFLUENCE ON THE OVERALL SPONTANEITY OF AN
ORGANISM; (2) WHETHER THE CHARACTERISTIC,
FUNDAMENTAL 24-H PATTERN OF METABOLIC VARIATION IS
REFLECTED IN ANY COMPARABLE VARIATION IN
RESPONSIVENESS TO A VERY WEAK RADIATION FIELD.
THIS ARTICLE DESCRIBES AND DISCUSSES THE FINDINGS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 648 028 6/18
UPPSALA UNIV (SWEDEN) GUSTAF WERNER INST

LOCALIZED RADIOLESIONS IN THE CENTRAL NERVOUS SYSTEM.
BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.

DEC 63 3P

CONTRACT: AF-E0AR-62-84

MONITOR: AFOSR 64-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, BIBLIOGRAPHIES), (*CENTRAL
NERVOUS SYSTEM, RADIATION EFFECTS), PATHOLOGY,
HISTOLOGY, SWEDEN (U)

THE BIBLIOGRAPHY LISTS 7 REPORTS OF RESEARCH
CONDUCTED IN THE FIELD OF RADIOBIOLOGY AND THE
EFFECTS OF IONIZING RADIATION ON THE CENTRAL NERVOUS
SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 648 204 6/18 6/5
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C

SOME EFFECTS OF NEODYMIUM LASER RADIATION UPON THE
HEADS OF DOGS, (U)

67 7P EARLE, KENNETH M. ; GARNER,
F. M. ; KRANER, KEITH L. ; MCKNIGHT, WILLIAM
B. ; DEARMAN, JAMES R. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN MILITARY MEDICINE V132
N2 P122-7 FEB 1967.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH AMC,
REDSTONE ARSENAL, ALA.

DESCRIPTORS: (*LASERS, WOUNDS AND INJURIES),
(*RADIOBIOLOGY, LASERS), DOGS, HEAD(ANATOMY), NEODYMIUM,
HISTOLOGICAL TECHNIQUES, PATHOLOGY (U)

FOUR BEAGLE CROSS DOGS WERE EXPOSED TO SINGLE
FOCUSED AND UNFOCUSED SHOTS OF NEODYMIUM LASER
RADIATION DIRECTED UPON THEIR SHAVED FOREHEADS.
THE ENERGY OF THE SHOTS ON TARGET WERE AS
FOLLOWS: (1) 610 JOULES UNFOCUSED OVER AN AREA
ABOUT ONE CM. IN DIAMETER, (2) 490 JOULES
FOCUSED OVER AN AREA ABOUT TWO MM. IN DIAMETER,
(3) 800 JOULES UNFOCUSED OVER AN AREA ABOUT ONE
CM. IN DIAMETER, (4) 610 JOULES FOCUSED OVER AN
AREA ABOUT TWO MM. IN DIAMETER. THE SEQUENCE OF
EVENTS WAS STUDIED BY HIGH SPEED MOVIES (UP TO 7000
FRAMES/SEC.), BY REGULAR SPEED MOVIES, AND BY
CLOSED CIRCUIT TELEVISION. ON TELEVISION THE HEADS
OF THE DOGS APPEARED TO MOVE AS A DIRECT RESULT OF
THE SHOT, BUT HIGH SPEED PHOTOGRAPHS REVEALED THAT
THE MOVEMENT CAME APPROXIMATELY 0.1 SECOND AFTER THE
SHOT. THE MOVEMENT OF THE HEAD CAME AFTER THE
BURNING OFF PERIOD HAD COMPLETELY CLEARED AND COULD
NOT HAVE BEEN DUE TO ANY EXPLOSIVE, ROCKET-LIKE, OR
OTHER PROPULSIVE EFFECT. THE TIME INTERVAL IS
COMPATIBLE WITH REACTION TO STARTLE OR PAIN. THE
DOGS APPEARED NORMAL AFTER THE SHOTS WITH NO EVIDENCE
OF CONCUSSION. TWO DOGS WERE OBSERVED FOR THREE
MONTHS AFTER THE SHOTS AND TWO DOGS WERE OBSERVED FOR
SIX MONTHS. AUTOPSY REVEALED SUPERFICIAL SCARRING
OF SKIN WITH FAILURE OF HAIR TO RE-GROW AT THE SITES
OF THE INITIAL BURNS. THE SKULL, DURA, AND BRAIN
OF EACH DOG SHOWED NO EVIDENCE OF DAMAGE FROM THE
LASER RADIATION ON GROSS OR MICROSCOPIC EXAMINATION.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 649 460 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

CHANGES IN THE TIGROID SUBSTANCE OF NEURONS UNDER THE
EFFECT OF RADIO WAVES, (U)

JAN 67 17P BILOKRYNTSKYI, V. S. ;
REPT. NO. ATD-67-3
MONITOR: TT 67-61396

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ZMINY TYGROYIDNOYI RECHOVNYI
NEIRONIV PID VPLYVOM RADIOKHVYL, TRANS. OF
FIZIOLOGICHNYI ZHURNAL (USSR) V12 N1 P70-8 1966.
TRANSLATIONS OF FOREIGN SCIENTIFIC AND TECHNICAL
LITERATURE.

DESCRIPTORS: (*RADIOBIOLOGY, *RADIO WAVES), (*NERVE
CELLS, RADIOBIOLOGY), RADIATION INJURIES,
MORPHOLOGY(RIOLOGY), SUPERHIGH FREQUENCY, SPINAL CORD,
GANGLIA, BRAIN, CELL STRUCTURE, HISTOLOGY, USSR (U)

EXPOSURE TO SINGLE RADIATION OF A HIGH-INTENSITY 3-
CM-BAND SHF FIELD (0.4-0.5 W/SQ CM) FOR 1 HOUR
RESULTS IN INJURY BEGINNING IN THE CEREBRAL AND
SPINAL-CORD NERVE CELLS OF CATS, TAKING THE FORM OF
VOLUME AND SHAPE CHANGES, CHANGES IN THE POSITION AND
TINCTORIAL PROPERTIES OF THE NUCLEUS AND NUCLEOLUS,
AND REGROUPING OF THE BASOPHILIC GRANULARITY OF THE
CHROMATOPHIL SUBSTANCE UP TO PULVERIZATION. THESE
INJURIES ARE MORE PRONOUNCED IN SOME FUNCTIONAL
GROUPS OF NEURONS THAN IN OTHERS. THE SENSORY
NEURONS ARE MORE LABILE, THOSE BELONGING IN THE
VEGETATIVE NERVE SYSTEM ARE LESS RESISTANT, AND THE
MOTOR SOMATIC NEURONS ARE THE MOST RESISTANT. THE
DEGREE OF MORPHOLOGICAL CHANGE IN NEURONS IN THE CASE
OF AN ENTIRE ORGANISM BEING EXPOSED TO AN SHF FIELD
CAN SERVE AS A RELIABLE INDICATOR OF THE INJURIOUS
EFFECT OF RADIO WAVES. IN DETERMINING THE
FUNCTIONAL CONDITION OF THE NEURON FROM THE
HISTOLOGIC POINT OF VIEW, IT IS OBVIOUSLY NECESSARY
TO TAKE INTO ACCOUNT THE CONDITION OF THE NUCLEOLUS,
ITS TINCTORIAL PROPERTIES, AND ITS POSITION, AS WELL
AS CHANGES IN THE CONDITION OF THE TIGROID SUBSTANCE
AND NUCLEUS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 649 810 6/18
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C
ORIENTATION OF EUGLENA BY RADIO-FREQUENCY FIELDS, (U)

JUL 66 5P GRIFFIN, J. L. ; STOWELL, R.
E. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN EXPERIMENTAL CELL
RESEARCH V44 N2/3 P684-8.

SUPPLEMENTARY NOTE: SUPPORTED IN PART BY ARMY MEDICAL
RESEARCH AND DEVELOPMENT COMMAND, WASHINGTON, D.
C.

DESCRIPTORS: (*RADIOBIOLOGY, *PROTOZOA), RADIOFREQUENCY,
ALIGNMENT, CELLS(BIOLOGY), ELECTRICAL CONDUCTIVITY,
CULTURE MEDIA, RESPONSE(BIOLOGY) (U)

PRELIMINARY SURVEYS HAVE SHOWN THAT RADIO-FREQUENCY
FIELDS CAUSE STRIKING SPATIAL ORIENTATION OF VARIOUS
PROTOZOA AND BACTERIA. THE ELECTROMAGNETIC
SPECTRUM (10 HZ TO 200 MHZ) WAS SURVEYED AND
TWO NEW OBSERVATIONS WERE MADE. FIRST, LIVING
CELLS OF SEVERAL KINDS EXHIBITED TWO CRITICAL
FREQUENCY RANGES FOR CHANGES OF ORIENTATION. IN
ADDITION TO THE ORIENTATION CHANGE NEAR 10 MHZ, A
SECOND FREQUENCY RANGE WAS OBSERVED ABOVE 100 MHZ,
AT WHICH THE ORGANISM RETURNED FROM ACROSS-THE-FIELD
ORIENTATION TO WITH-THE-FIELD ORIENTATION. SECOND,
CHANGING THE ELECTRICAL CONDUCTIVITY OF THE MEDIUM
ALTERED TRANSITION FREQUENCIES. HIGH
CONDUCTIVITIES CAUSED LIVING CELLS TO ORIENT ONLY
WITH THE FIELD, THUS BEHAVING LIKE NONLIVING
PARTICLES. THE PHYTOFLAGELLATE EUGLENA GRACILIS
WAS SELECTED FOR DETAILED STUDIES BECAUSE THE CELLS
ARE HARDY, ELONGATED, FREE-SWIMMING, AND RELATIVELY
EASY TO ORIENT. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 651 879 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ALTERED RECUPERATIVE POTENTIAL IN PREVIOUSLY
IRRADIATED MICE, (U)

APR 67 25P AINSWORTH, E. J. ; LARSEN,
REX M. ;
REPT. NO. USNRDL-TR-67-35
MONITOR: NAVMED MR005.08-0017

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION INJURIES, RECOVERY), X RAYS,
RADIATION DOSAGE, SUBLETHAL DOSAGE, MICE (U)

EARLIER STUDIES HAVE SHOWN A NON-RECUPERABLE COMPONENT OF RADIATION INJURY IN RODENTS. THIS COMPONENT IS MANIFESTED BY A SMALL INCREASE IN RADIOSENSITIVITY AND AS INCOMPLETE RECOVERY OF THE HEMATOPOIETIC SYSTEM. THE PRESENT STUDIES WERE DESIGNED TO EVALUATE THE INFLUENCE OF PREVIOUS SUBLETHAL IRRADIATION, AND PERHAPS NON-RECUPERABLE LESIONS, ON THE ABILITY OF LAF 1 MALE MICE TO RECUPERATE FROM X-RADIATION INJURY. RECUPERATION FROM RADIATION INJURY WAS STUDIED USING THE SPLIT-DOSE METHOD. MICE WERE GIVEN AN INITIAL EXPOSURE TO 450 R OF X-RADIATION FROM WHICH THEY WERE ALLOWED TO RECUPERATE. AT 14 OR 30 DAYS AFTER THE INITIAL EXPOSURE, THE LD50'S OF THE ANIMALS HAD RETURNED TO NORMAL. WHEN RECUPERATION POTENTIAL WAS MEASURED AT 14 DAYS FOLLOWING THE INITIAL EXPOSURE, A SIGNIFICANT DELAY IN RECUPERATION WAS OBSERVED. THUS, THE RETURN TO A NORMAL LD50 DOES NOT PREDICT COMPLETE RESTORATION OF RECUPERATIVE CAPACITY. THE DELAY IN RECUPERATION OBSERVED AT 14 DAYS WAS NOT PRESENT AT 30 DAYS AFTER THE INITIAL EXPOSURE. THIS INDICATES THAT THE RADIATION LESION WHICH INFLUENCES RECUPERATION IS NOT A PERSISTENT LESION. THESE FINDINGS HAVE BEARING ON THE CONCEPT OF EQUIVALENT RESIDUAL DOSE (ERD) WHICH IS USED TO PREDICT RADIATION LETHALLY IN MULTIPLE EXPOSURE SITUATIONS INVOLVING HUMANS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 652 941 6/18

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

LATE HISTOPATHOLOGICAL CHANGES IN KIDNEYS OF GRID-IRRADIATED MICE, (U)

66 10P BUCCI, THOMAS J. ;
MCLAUGHLIN, MARY M. ; CONANT, CHARLES N. ;
KREBS, ADOLPH T. ; WOODWARD, KENT T. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN STRAHLENTHERAPIE V131 N3
P352-60 1966.

DESCRIPTORS: (*RADIOTHERAPY, SHIELDING), (*KIDNEYS,
RADIATION EFFECTS), HISTOLOGY, PATHOLOGY,
AGING (PHYSIOLOGY), RADIATION DOSAGE, X RAYS, MICE (U)

MICE IRRADIATED WITH HIGH DOSES (1100, 2000, AND 3000 R) OF X-RAY THROUGH LEAD GRIDS WERE OBSERVED FOR MANY MONTHS FOLLOWING EXPOSURE. ANIMALS WERE EXAMINED AT INTERVALS FOR GROSS AND MICROSCOPIC CHANGES. GRID-SHIELDED MICE MAINTAINED THEIR HEALTHY APPEARANCE THROUGHOUT THE EXPERIMENT. GRID PATTERNS OF EPILATION APPEARED IN THE FUR WITHIN A FEW WEEKS, BUT THE EARLIEST GROSS EVIDENCE OF AN INTERNAL GRID PATTERN WAS SEEN ONLY AFTER 11 MONTHS IN KIDNEYS OF MICE EXPOSED TO 3000 R. IN ANIMALS EXPOSED TO LOWER DOSES THIS WAS DELAYED. TYPICAL RADIATION NEPHROPATHY CAN BE PRODUCED IN FOCAL AREAS CORRESPONDING TO THE GRID PORES. THE INTERVENING RENAL TISSUE OF THE SAME KIDNEY IS THEN AVAILABLE AS CONTROL MATERIAL. IT IS SUGGESTED THAT THIS TECHNIQUE MAY BE OF CONSIDERABLE VALUE IN SEPARATING CHANGES DUE TO AGING FROM CHANGES DUE TO RADIATION IN THE KIDNEY, AND PERHAPS IN OTHER ORGANS AS WELL. (U)
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 653 063 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE INFLUENCE OF WHOLE-BODY EXPOSURE TO X-RAYS OR
NEUTRONS ON THE LIFE SPAN DISTRIBUTION OF TUMORS
AMONG MALE RATS, (U)

APR 67 60P CASTANERA, TORIRIO J. ; JONES,
DAVE C. ; KIMELDORF, DONALD J. ; ROSEN, V. J. ;

REPT. NO. USNRDL-TR-67-36
MONITOR: NAVMED MR005.08-0018

UNCLASSIFIED REPORT

DESCRIPTORS: (*WHOLE BODY IRRADIATION, *NEOPLASMS), LIFE
SPAN, RADIATION EFFECTS, X RAYS, NEUTRONS, CANCER,
RATS (U)

ADULT MALE RATS WERE IRRADIATED WITH SINGLE, WHOLE-
BODY DOSES OF X-RAYS (430 OR 680 RADS) OR WITH
NEUTRONS (230 OR 320 RADS) AND MAINTAINED IN A
DURATION OF LIFE STUDY. AN ANALYSIS OF THE EXTENT
OF TUMORIGENESIS WAS MADE ACCORDING TO THE TYPE OF
TUMOR, THE NUMBER OF ANIMALS WITH TUMORS AND THE
DISTRIBUTION OF TUMORS AMONG ORGANS FOR EACH DOSE
GROUP. GREATER PROPORTIONS OF THE IRRADIATED
GROUPS DEVELOPED GREATER NUMBERS OF TUMORS THAN DID
THE CONTROLS, EVEN THOUGH LIFESPAN WAS REDUCED BY
IRRADIATION. RADIATION WAS PARTICULARLY EFFECTIVE
IN INDUCING MALIGNANT TUMORS OF EPITHELIAL ORIGIN
ALTHOUGH THERE WERE SIGNIFICANT EXCESSES OF ANIMALS
WITH MALIGNANT NON-EPITHELIAL TUMORS AND WITH BENIGN
TUMORS OF BOTH EPITHELIAL AND NON-EPITHELIAL ORIGIN.
AMONG THE NUMEROUS ORGANS AND TISSUES IN WHICH
TUMORS DEVELOPED, THE SKIN, KIDNEY, LUNG AND ISLETS
OF LANGERHANS APPEARED ESPECIALLY RESPONSIVE TO
IRRADIATION. CONSISTENT RELATIONSHIPS BETWEEN
INCIDENCES OF ANIMALS WITH TUMORS AND DOSE OR QUALITY
OF RADIATION WERE NOT APPARENT. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 653 848 6/18
FLORIDA UNIV GAINESVILLE COLL OF MEDICINE

FUNCTION OF MAMMALIAN RETINA DURING X-
IRRADIATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT., 1 JUN 65-1 DEC 66,
FEB 67 33P DAWSON, WILLIAM W. ;
CONTRACT: DA-49-193-MD-2733

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, *RETINA), X RAYS,
RADIATION DOSAGE, EYE, EYE PIGMENTS, PHOTORECEPTORS,
THRESHOLDS(PHYSIOLOGY), MAMMALS, ELECTRORETINOGRAPHY,
VISION, ADAPTATION(PHYSIOLOGY), ELECTROPHYSIOLOGY,
NERVOUS SYSTEM

(U)

THE ELECTRICAL POTENTIALS ELICITED BY LIGHT AND
LOW-DOSE X-IRRADIATION WERE MEASURED WITHIN THE
VITREOUS BODY OF THE EYES OF RABBITS. NERVE BLOCK
AGENTS AND PHARMACOLOGICAL DEGENERATION OF THE VISUAL
RECEPTORS SUPPORT THE CONCLUSION THAT ALTHOUGH THE
EYE IS EXCITED BY X-RAYS THE EXCITATION DOES NOT
OCCUR AT THE SITE(S) RESPONSIBLE FOR LIGHT
RECEPTION. THE RESULTS ARE CONSISTANT WITH NEURAL
INTERACTION EFFECTS, SPECIFICALLY, INTERACTIONS WITH
THE LATERAL INHIBITORY SYSTEM WHICH ENCODES RETINAL
INFORMATION AND INCREASES THE SHARPNESS OF FIGURE-
GROUND RELATIONSHIPS. THESE FINDINGS ARE
INCONSISTANT WITH PHOTOPIGMENT BLEACHING BY X-RAYS
WHICH HAS BEEN SUGGESTED AS THE BASIS FOR VISUAL
EXCITATION BY IONIZING RAYS OF ALL ENERGIES.

(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 653 864 6/16 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ANTIBODY PLAQUE-FORMING CELLS IN UNSENSITIZED MICE:
SPECIFICITY AND RESPONSE TO NEONATAL THYMECTOMY, X
IRRADIATION AND PHA, (U)

JUL 67 33P HEGE, JOHN S. ; COLE, LEONARD
J. ;
REPT. NO. USNRDL-TR-67-47
MONITOR: NAVMED MR005.08-0006

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANTIGEN ANTIBODY REACTIONS, WHOLE BODY
IRRADIATION), ANTIGENS + ANTIBODIES, BIOSYNTHESIS,
HEMOLYSIS, THYMUS, EXCISION, X RAYS, IMMUNE SERUMS,
AGGLUTININS, MICE, SPLEEN (U)

USING THE STANDARD ANTIBODY PLAQUE TECHNIQUE,
NUMBERS OF BACKGROUND ANTI-SHEEP ERYTHROCYTE PLAQUE-
FORMING CELLS (PFC'S) IN SPLEENS OF UNSENSITIZED
MICE HAVE BEEN DETERMINED AFTER NEONATAL THYMECTOMY,
AFTER WHOLE BODY X IRRADIATION AND AFTER INJECTION
OF PHYTOHEMAGGLUTININ-M OR TYPHOID PARATYPHOID
VACCINE. THE RESULTS SHOW THAT NUMBERS OF
BACKGROUND PFC'S ARE NOT AFFECTED BY NEONATAL
THYMECTOMY OR BY WHOLE BODY X IRRADIATION AT DOSE
LEVELS KNOWN TO INHIBIT CELLULAR PROLIFERATION, BUT
THAT THEY ARE SIGNIFICANTLY INCREASED (10-20
FOLD) BY PHYTOHEMAGGLUTININ, TYPHOID VACCINE AND
OTHER UNRELATED ANTIGENS. SIMULTANEOUS
DETERMINATIONS OF BACKGROUND ANTI-SHEEP ERYTHROCYTE
AND ANTI-HORSE ERYTHROCYTE PFC'S INDICATE THAT
THESE TWO POPULATIONS ARE INDEPENDENT OF ONE ANOTHER.
FROM THESE AND OTHER STUDIES IT IS CONCLUDED THAT
BACKGROUND PFC'S (1) PRODUCE SPECIFIC
HEMOLYSIN, (2) ARE THYMUS INDEPENDENT, (3)
ARE RELATIVELY LONG LIVED (AVERAGE LIFE TIME > 7
DAYS), (4) ARE NOT RELATED TO THE ANTIGEN
SENSITIVE PRECURSORS OF THE PRIMARY RESPONSE PFC'S.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 657 609 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CLONAL REPOPULATION IN RETICULAR TISSUES OF X-
IRRADIATED MICE: EFFECT OF DOSE AND OF LIMB-
SHIELDING, (U)

AUG 67 23P NOWELL, PETER C. ; COLE,
LEONARD J. ;
REPT. NO. USNRDL-TR-67-79
PROJ: NAVMED-MR005.08-0024

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, *CHROMOSOMES),
(*HEMOPOIETIC SYSTEM, RADIATION EFFECTS), WHOLE BODY
IRRADIATION, RADIATION DOSAGE, TISSUES(BIOLOGY),
REGENERATION, LYMPHATIC SYSTEM, THYMUS, SHIELDING, X
RAYS, EXTREMITIES, GROWTH(PHYSIOLOGY), ANOMALIES, MIC(U)

CHROMOSOME STUDIES IN IRRADIATED MICE HAVE
INDICATED THAT FOLLOWING HIGH SUBLETHAL WHOLE-BODY
EXPOSURE REGENERATION OF THE RETICULAR TISSUES OCCURS
IN A CLONAL FASHION. WITH INCREASING DOSES, FROM
100 TO 700 RADS, THESE ORGANS APPEARED TO BE
REPOPULATED FROM FEWER AND FEWER SURVIVING STEM
CELLS. IN A FEW INSTANCES AT THE HIGHEST DOSE, THE
PROGENY OF THE SAME CELL APPARENTLY DIFFERENTIATED TO
MARROW CELLS AT ONE SITE AND LYMPHOID CELLS IN
OTHERS, SUGGESTIVE EVIDENCE OF A TOTIPOTENT
HEMATOPOIETIC STEM CELL IN THE ADULT MOUSE.
CHROMOSOME STUDIES IN MICE RECEIVING 900 RADS WITH
ONE LIMB SHIELDED HAVE INDICATED REPOPULATION OF THE
THYMUS AND OTHER RETICULAR TISSUES BY UNDAMAGED CELLS
FROM THE SHIELDED MARROW. SUCH MARROW-DERIVED
CELLS, PERHAPS BY RESTORING IMMUNOLOGICAL COMPETENCE
OR BY NONIMMUNOLOGICAL CONTACT INHIBITION, COULD
ACCOUNT FOR THE KNOWN EFFECT OF LIMB SHIELDING IN
REDUCING THE INCIDENCE OF RADIATION-INDUCED THYMIC
LYMPHOMAS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 666 179 6/18 5/10
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

SOME EFFECTS OF RUBY LASER IRRADIATION ON RAT
PERFORMANCE.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
NOV 67 29P REVUSKY, SAMUEL H. ;
REPT. NO. USAMRL-759
PROJ: DA-3A014501B71R
TASK: 01

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *LASERS), BEHAVIOR,
RADIATION INJURIES, ABDOMEN, DOSAGE,
THRESHOLDS(PHYSIOLOGY), DEGRADATION, PERFORMANCE(HUMAN),
RATS (U)

A TOTAL DOSE OF 100 JOULES DELIVERED DURING 1.8 MS
AT A DENSITY OF 20 J/SQ CM ON THE MIDLINE OF THE
ABDOMEN DISRUPTED PERFORMANCE IN THE PRESENCE OF THE
REWARDED STIMULUS, BUT DID NOT APPEAR TO DISORGANIZE
THE ANIMALS; THAT IS, THE DISCRIMINATION BETWEEN THE
REWARDED STIMULUS AND THE NONREWARDED STIMULI
REMAINED INTACT. THE EFFECT DISAPPEARED ON THE
THIRD DAY AFTER IRRADIATION. LOWER DOSES APPEARED
TO BE INEFFECTIVE, ALTHOUGH DIFFERENCES IN INDIVIDUAL
SUSCEPTIBILITY TO IRRADIATION PRECLUDE A DEFINITE
FINDING AT THIS POINT. A SIMILAR DOSE OF 200
JOULES TO THE HEAD APPEARED TO BE THE THRESHOLD FOR
PERFORMANCE DECREMENT. THERE WAS SOME EVIDENCE
THAT HEAD INJURY COULD PRODUCE A LONGER LASTING
PERFORMANCE DECREMENT AND COULD DISORGANIZE BEHAVIOR
IN A MANNER NOT OBTAINABLE WITH IRRADIATION OF THE
ABDOMEN. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 666 713 6/18
CALIFORNIA UNIV LOS ANGELES SCHOOL OF MEDICINE

USE OF CHROMOSOME ABERRATIONS TO ESTIMATE X-RAY AND
GAMMA-RAY DOSE TO MAN. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. SEP 65-AUG 66,
DEC 67 24P NORMAN, AMOS ; SASAKI, MASAO
S. ; OTTOMAN, RICHARD E. ; VEOMETT, ROBERT C. ;

CONTRACT: AF 41(609)-2944
TASK: 775702
MONITOR: SAM TR-67-112

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACTS AF
41(657)-391 AND AF 41(609)-1909.

DESCRIPTORS: (*RADIOBIOLOGY, CHROMOSOMES),
(*CHROMOSOMES, ANOMALIES), RADIATION DOSAGE, X RAYS,
GAMMA RAYS, LYMPHOCYTES, RADIATION EFFECTS, SAMPLING,
CULTURE MEDIA (U)

THE FREQUENCY OF CHROMOSOME ABERRATIONS IN
LYMPHOCYTES TAKEN FROM THE PERIPHERAL BLOOD PROVIDES
A USEFUL MEASURE OF ABSORBED DOSE. THE ESTIMATION
OF DOSE IS AFFECTED BY TIME IN CULTURE OF THE
LYMPHOCYTES, BY SAMPLING ERROR AND SAMPLING TIME, AND
BY SIZE, RATE, DISTRIBUTION, AND QUALITY OF RADIATION
DOSE. DATA ON THE EFFECT OF THESE VARIABLES ARE
PRESENTED. DOSE IS ESTIMATED FOR FIVE PEOPLE
ACCIDENTALLY EXPOSED TO IONIZING RADIATION. FOUR
APPENDIXES GIVE A DETAILED ACCOUNT OF OPTIMAL
TECHNIQUES FOR MAKING CHROMOSOME PREPARATIONS, THE
YIELDS OF ABERRATIONS AS A FUNCTION OF DOSE IN 50-
HOUR AND 72-HOUR CULTURES, AND THE YIELD OF ACENTRIC
FRAGMENTS PER DICENTRIC. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 668 619 6/18

TUFTS UNIV MEDFORD MASS DEPT OF BIOLOGY

THE ACTION OF MICROWAVE RADIATION ON THE EYE, (U)

68 17P CARPENTER, RUSSELL L. ; VAN

UMMERSEN, CLAIR A. ;

CONTRACT: AF 41(657)-86, PHS-GM-09495

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN THE JOURNAL OF
MICROWAVE POWER, P3-20 N.D.

SUPPLEMENTARY NOTE: PRESENTED AT SYMPOSIUM ON
MICROWAVE POWER (1967), STANFORD UNIV., MARCH
30, 1967.

DESCRIPTORS: (*RADIOBIOLOGY, *MICROWAVES), (*RADIATION
INJURIES, *EYE), PATHOLOGY, THRESHOLDS (PHYSIOLOGY),
TISSUES (BIOLOGY), RADIATION HAZARDS,
EXPOSURE (PHYSIOLOGY) (U)

MICROWAVE POWER CAN CAUSE FORMATION OF OPACITIES IN
THE LENS OF THE RABBIT EYE EXPOSED TO CONTINUOUS WAVE
OR PULSED WAVE RADIATION AT FREQUENCIES FROM 2.45
GHZ TO 10 GHZ. WHEN THE EYE IS IRRADIATED IN A
FREE FIELD, THE OPACITY (CATARACT) DEVELOPS IN
THE POSTERIOR PART OF THE LENS; IN LOCATION, FORM AND
GROWTH, IT RESEMBLES CATARACTS CAUSED BY IONIZING
RADIATION. WHEN THE EYE IS IRRADIATED AT THE SAME
FREQUENCIES AS PART OF A 'CLOSED' WAVEGUIDE SYSTEM,
THE CATARACT DEVELOPS IN THE ANTERIOR PART OF THE
LENS, LIKE THOSE CAUSED BY INFRARED RADIATION.
ALTHOUGH FOR EVERY POWER LEVEL THERE IS A MINIMAL
EXPOSURE PERIOD WHICH WILL CAUSE AN OPACITY, REPEATED
SHORTER EXPOSURES CAN HAVE A CUMULATIVE EFFECT, THE
MAIN DETERMINING FACTOR BEING THE TIME INTERVAL
BETWEEN SUCCESSIVE EXPOSURES. EXPERIMENTAL
EVIDENCE SUGGESTS THAT MICROWAVE CATARACTS ARE NOT
SIMPLY A RESULT OF MICROWAVE HEATING BUT ARE CAUSED
BY SOME OTHER PROPERTY OF THE RADIATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 668 686 6/18
FLORIDA UNIV GAINESVILLE

CELLULAR RESPONSE TO RADIATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR 66-31 MAR 67,
MAR 67 23P CROMROY, HARVEY ;
REPT. NO. TPC-67-40
CONTRACT: N00228-66-C-1103
MONITOR: OCD 3146A

UNCLASSIFIED REPORT

DESCRIPTORS: (*CELLS(BIOLOGY), *RADIOBIOLOGY), RADIATION
EFFECTS, MAMMALS, INSECTS, PLANTS(BOTANY), CHROMOSOMES,
RADIATION TOLERANCE, SURVIVAL(PERSONNEL),
DEOXYRIBONUCLEIC ACIDS, X RAYS, GAMMA RAYS, LEAST
SQUARES METHOD, WHOLE BODY IRRADIATION, RADIATION
DOSAGE

(U)

THE RADIOSENSITIVITY AND NUCLEAR VOLUMES WERE
DETERMINED FOR SEVEN SPECIES OF MAMMALS, EIGHT
SPECIES OF INSECTS, AND ONE SPECIES OF PLANT,
ARAUCARIA EXCELSA. THE FOLLOWING CELLS WERE
SELECTED AS INDICATORS OF RADIATION SENSITIVITY:
(1) MAMMALS -- COLUMNAR EPITHELIAL CELLS OF THE
DUODENAL INTESTINAL MUCOSA; (2) INSECTS --
ENDOTHELIAL CELLS LINING THE MID GUT; (3)
PLANTS -- THE NON-DIVIDING, INTERPHASE NUCLEI OF
THE TUNICA AND OUTER CORPUS CELL LAYER OF THE
TERMINAL SHOOT MERISTEM. THE MAMMALS WERE WHOLE-
BODY IRRADIATED WITH A 1 MVP X-RAY UNIT; THE
INSECTS WHOLE-BODY IRRADIATED WITH A 300 KVP X-RAY
UNIT; AND THE PLANT, TOTALLY IRRADIATED WITH COBALT
60 GAMMA RAYS. THE INTERPHASE CHROMOSOME VOLUME
(NUCLEAR VOLUME DIVIDED BY THE DIPLOID NUMBER OF
CHROMOSOMES) FOR EACH SPECIES WAS DETERMINED AND
PLOTTED AGAINST ITS RESPECTIVE LD50. THE
MAMMALIAN SPECIES HAD A POSITIVE SLOPE WHEREAS THE
INSECT SPECIES HAD A NEGATIVE SLOPE. THE PLANT,
ARAUCARIA, WHEN PLOTTED WITH THE DATA OBTAINED BY
CAPELLA AND CONGER (JUNE, 1966) ALSO HAD A
NEGATIVE SLOPE. THE POSITIVE SLOPE OBTAINED WITH
MAMMALIAN SPECIES INDICATED THAT THE LARGER THE
INTERPHASE NUCLEAR VOLUME, THE LESS SENSITIVE THE
ANIMAL WAS TO IONIZING RADIATION. THE INVERSE OF
THIS WAS TRUE FOR PLANTS AND INSECTS. IT WAS
CONCLUDED THAT A RELATIONSHIP BETWEEN LD50 AND
INTERPHASE NUCLEAR VOLUME DOES EXIST AND WOULD BE
VALUABLE AS A PREDICTOR. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 669 144 6/1 6/18
INDIANA UNIV BLOOMINGTON DEPT OF CHEMISTRY

REDUCTION AND ALKYLATION OF IMMUNOGLOBULINS FROM
NORMAL, IRRADIATED AND SPLENECTOMIZED RABBITS, (U)

67 4P KNIGHT, KATHERINE L. ;
CONTRACT: NONR-3104(00), PHS-GM-01852

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN PROCEEDINGS OF THE
SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, V124
P1122-4 1967.

DESCRIPTORS: (*GAMMA GLOBULIN, ALKYLATION), MOLECULAR
STRUCTURE, ELECTROPHORESIS, REDUCTION(CHEMISTRY),
SPLEEN, EXCISION, RADIATION EFFECTS, X RAYS, IMMUNITY,
RADIATION DOSAGE, ANTIGENS + ANTIBODIES (U)

THE L CHAIN PATTERNS OF REDUCED AND ALKYLATED
GAMMA-GLOBULIN PREPARATIONS FROM SPLENECTOMIZED,
IRRADIATED AND NORMAL RABBITS WERE COMPARED BY STARCH
GEL ELECTROPHORESIS. ANIMALS IRRADIATED WITH THEIR
SPLEEN SHIELDED PRODUCED GAMMA-GLOBULIN WITH L
CHAINS SIMILAR TO THOSE OF SPLENECTOMIZED AND NORMAL
RABBITS. THUS, THE L CHAINS FORMED IN THE SPLEEN
APPARENTLY DO NOT DIFFER ELECTROPHORETICALLY FROM THE
L CHAINS OF GAMMA-GLOBULIN FORMED IN OTHER ORGANS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 669 787 6/15 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CHEMICAL RADIOPROTECTION OF HEMOPOIETIC COLONY-
FORMING CELLS: COMPARATIVE EFFECT OF AET, ANOXIA AND
URETHAN. (U)

APR 68 24P COLE, L. J. ; DAVIS, W. E.
, JR;

REPT. NO. USNRDL-TR-68-44

PROJ: NAVMED-MR005-08-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOPROTECTIVE AGENTS, HEMOPOIETIC
SYSTEM), BONE MARROW, SPLEEN, RADIATION DOSAGE, ANOXIA,
MORTALITY RATES, IN VIVO ANALYSIS, X RAYS, WHOLE BODY
IRRADIATION (U)

IDENTIFIERS: AET, URETHAN (U)

THE HEMOPOIETIC COLONY-FORMING UNIT (CFU)
TECHNIQUE OF TILL AND MCCULLOCH WAS EMPLOYED TO
TEST THE RADIOPROTECTIVE EFFECT OF AET, ANOXIA AND
URETHAN ON MARROW CELLS IRRADIATED IN VIVO. FOR
AET AND ANOXIA, A DOSE-REDUCTION FACTOR OF 1.9 TO
2.1 WAS FOUND. SINCE THE MARROW CELLS WERE ASSAYED
FOR CFU CONTENT IMMEDIATELY AFTER IRRADIATION OF
THE DONOR, THE OBSERVED EFFECT CAN BE INTERPRETED AS
A 'TRUE' RADIATION DOSE REDUCTION. BY CONTRAST,
URETHAN INJECTION DID NOT INCREASE THE SURVIVAL OF
MARROW CFU ASSAYED IMMEDIATELY AFTER WHOLE-BODY X
IRRADIATION. HOWEVER, URETHAN AS WELL AS AET,
AFFORDED RADIOPROTECTION OF ENDOGENOUS CFU CONTENT
OF SPLEEN AND BONE MARROW, BUT NOT OF ENDOGENEOUS
SPLEEN COLONY COUNT. IT IS CONCLUDED THAT THE
MECHANISM OF RADIOPROTECTION BY URETHAN IS
FUNDAMENTALLY DIFFERENT FROM THAT OF AET OR ANOXIA.
THE DATA ALSO SUGGEST THAT MOUSE BONE MARROW CFU
CONTENT, ASSAYED IMMEDIATELY AFTER IRRADIATION, DOES
NOT NECESSARILY CORRELATE WITH ANIMAL SURVIVAL.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 671 054 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EARLY ALVEOLAR CELL MITOTIC ACTIVITY AND PULMONARY
TUMOR INCIDENCE IN URETHAN TREATED X-IRRADIATED MICE, (U)

APR 68 17P BIRDWELL, THOMAS R. ; COLE,
LEONARD J. ;
REPT. NO. USNRDL-TR-68-51
PROJ: NAVMED MR005.08-0025

UNCLASSIFIED REPORT

DESCRIPTORS: (*CANCER, *LUNG), (*RADIATION EFFECTS,
NEOPLASMS), MITOSIS, X RAYS, RADIATION DOSAGE,
INHIBITION (U)
IDENTIFIERS: URETHAN (U)

GROUPS OF YOUNG ADULT LAF1 MICE RECEIVED A SINGLE
INTRAPERITONEAL INJECTION OF URETHAN (1 MG/G BODY
WEIGHT) GIVEN EITHER ALONE, BEFORE (1 OR 7
DAYS) OR AFTER (7 DAYS) A 300 R WHOLE BODY
DOSE OF X RADIATION. THE EFFECTS OF THESE
TREATMENTS ON ALVEOLAR CELL MITOTIC ACTIVITY DURING
THE SUBSEQUENT 15 DAYS, AND ON PULMONARY TUMOR
INCIDENCE AT 13 TO 24 WEEKS WERE DETERMINED. THE
MICE RECEIVING URETHAN ONLY, ALL SHOWED LUNG TUMORS
AT 24 WEEKS. THE GROUPS IRRADIATED PRIOR TO OR
AFTER URETHAN INJECTION SHOWED SIGNIFICANT DECREASES
IN THE NUMBER OF TUMORS PER MOUSE, AS WELL AS A
DECREASE IN MITOTIC ACTIVITY 15 DAYS POSTTREATMENT.
THE SUPPRESSION IN BOTH THESE PARAMETERS WAS MORE
PRONOUNCED WHEN X RADIATION PRECEDED URETHAN
TREATMENT BY 1 WEEK, THAN WHEN IT WAS ADMINISTERED 1
WEEK AFTER URETHAN. THE RESULTS INDICATE THAT AT
THIS MODERATE DOSE OF X RADIATION (300 R) THERE
IS AN INHIBITORY EFFECT ON URETHAN LUNG
TUMORIGENESIS. IT IS SUGGESTED THAT X IRRADIATED
ALVEOLAR CELLS UNDER THESE EXPERIMENTAL CONDITIONS
ARE RELATIVELY RESISTANT TO THE EFFECTS OF URETHAN,
AS REFLECTED BOTH IN MITOTIC ACTIVITY, AND IN
SUBSEQUENT TUMOR PRODUCTION. THE THEORETICAL BASES
FOR THESE OBSERVATIONS ON LUNG TUMORIGENESIS ARE
BRIEFLY DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 671 436 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

SOVIET RADIOBIOLOGY. (U)

DESCRIPTIVE NOTE: SURVEYS OF FOREIGN SCIENTIFIC AND
TECHNICAL LITERATURE,

JUN 68 94P FORTUNATOW, E. ;
REPT. NO. ATD-68-105-108-9

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, ABSTRACTS), SPACE FLIGHT,
RADIATION EFFECTS, RADIOPROTECTIVE AGENTS, GENETICS,
ELECTROMAGNETIC RADIATION, MAGNETIC FIELDS, ELECTRIC
FIELDS, RADIATION INJURIES, SHIELDING,
ELECTROPHYSIOLOGY, RADIATION DOSAGE, USSR (U)

CONTENTS: SPACE ORIENTED RADIOBIOLOGY;
GENETIC ASPECTS OF RADIOBIOLOGY; RADIOPROTECTIVE
MEASURES; EFFECTS OF RADIATION COMBINED WITH OTHER
SPACEFLIGHT FACTORS; NON SPACE-ORIENTED
RADIOBIOLOGY; BIOLOGICAL EFFECTS OF MAGNETIC,
ELECTROMAGNETIC, AND ELECTRIC FIELDS. (U)

AD-A047 300

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA
RADIOBIOLOGY.(U)
NOV 77

F/G 6/18

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 671 806 6/5

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ONTOGENY OF THE MOUSE IMMUNE SYSTEM: IMMUNOGLOBULIN
PRODUCING CELLS, (U)

MAY 68 16P TYAN, MARVIN L. ;HERZENBERG,

LEONARD A. ;

REPT. NO. USNRDL-TR-68-57

PROJ: MR005.08-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (*EMBRYOS, IMMUNITY), (*GAMMA GLOBULIN,
EMBRYOS), THYMUS, EXCISION, CELLS(BIOLOGY), LYMPHOCYTES,
TISSUES(BIOLOGY), ANTIGENS + ANTIBODIES, X RAYS,
RADIATION DOSAGE, MEMBRANES(BIOLOGY) (U)

WHEN MOUSE FETAL TISSUES OF VARIOUS AGES WERE
TRANSFERRED TO ALLOGENEIC OR CONGENIC HOSTS WHICH
DIFFERED FROM THE IMMUNOGLOBULIN LOCUS IG 1, IT WAS
FOUND THAT CELLS WHICH HAVE THE POTENTIAL TO
DIFFERENTIATE INTO IMMUNOGLOBULIN PRODUCING CELLS
APPEAR IN THE YOLK SAC, LIVER AND CAUDAL HALF OF THE
EMBRYO BY THE 9TH DAY OF GESTATION. LATE IN
PREGNANCY THESE CELLS ARE FOUND IN THE THYMUS, GUT,
LUNG, SPLEEN, FEMUR AND PERIPHERAL BLOOD. CERTAIN
OF THE DATA SUGGEST THAT IMMUNOGLOBULIN PRODUCING
CELL LINES AND THOSE WHICH MEDIATE CELL-BOUND IMMUNE
RESPONSE ARISE EARLY INGESTATION AS SEPARATE CELL
POPULATIONS. FURTHER, IT WAS SHOWN THAT
IMMUNOGLOBULIN SYNTHESIS PER SE IS INDEPENDENT OF THE
THYMUS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 672 621 6/18

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

IN VIVO DOSIMETRY BY ELECTRON SPIN RESONANCE
SPECTROSCOPY,

(U)

DEC 67 6P BRADY, JOHN M. ; AARESTAD,
NORMAN O. ; SWARTZ, HAROLD M. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HEALTH PHYSICS, V15 P43-47
1968.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 13 OCT
67.

DESCRIPTORS: (*ELECTRON PARAMAGNETIC RESONANCE,
RADIATION MEASURING INSTRUMENTS), (*RADIATION INJURIES,
IN VIVO ANALYSIS), TISSUES(BIOLOGY), RADIATION DOSAGE,
TEETH, X RAYS, GAMMA RAYS, BONES, NAILS(TISSUES), HEALTH
PHYSICS (U)

SEVERAL TISSUES, ESPECIALLY HARD TISSUES, SHOWED
PERSISTENT ELECTRON SPIN RESONANCES FOLLOWING IN VIVO
OR IN VITRO IRRADIATIONS. THE RESONANCES HAD A
LINEAR RELATION TO DOSE. DOSE MEASUREMENTS WERE
MADE IN TEETH AT LESS THAN 100 RADS OF 60CO
RADIATION. THE METHOD APPEARS TO BE APPLICABLE FOR
DOSIMETRY OF ACCIDENTAL IRRADIATIONS, ESPECIALLY X-
OR GAMMA-RAY EXPOSURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 672 819 6/18
NORTHROP CORPORATE LABS HAWTHORNE CALIF LIFE SCIENCES
LABS

FLUOROMETRIC DETECTION OF BIOLOGIC CHANGES IN
IRRADIATED LABORATORY ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 66-NOV 67,
MAY 68 30P DEMETRIOU, JAMES A. ; BEATTIE,
JOHN M. ;
CONTRACT: F41609-67-C-0036
PROJ: AF-7757
TASK: 775702
MONITOR: SAM TR-68-43

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, LABORATORY ANIMALS),
RADIATION EFFECTS, SUBLETHAL DOSAGE, WHOLE BODY
IRRADIATION, URINE, FLUORESCENCE, CHROMATOGRAPHIC
ANALYSIS, PRIMATES, RODENTS (U)

THE EXCRETION OF FLUORESCENT PRODUCTS BY RODENTS
AND PRIMATES AFTER EXPOSURE TO WHOLE-BODY SUBLETHAL
60CO GAMMA IRRADIATION WAS INVESTIGATED. GEL
FILTRATION CHROMATOGRAPHY AND THIN-LAYER
CHROMATOGRAPHY WERE USED TO FRACTIONATE AND
QUANTITATE RADIATION-RESPONSIVE FLUORESCENT URINARY
PRODUCTS. A MAJOR ADVANCEMENT IN QUANTITATING
FLUORESCENT URINE PRODUCTS WAS ACHIEVED BY THE
FLUORESCENCE-SCANNING OF THIN-LAYER CHROMATOGRAMS.
CERTAIN RADIATION DOSE-RESPONSE RELATIONSHIPS WERE
MEASURABLE IN TWO MAJOR FLUORESCENT FRACTIONS FROM
GEL FILTRATION CHROMATOGRAPHY AND THIN-LAYER
CHROMATOGRAPHY OF RODENT AND PRIMATE URINE EXTRACTS
WITHIN TWENTY-FOUR HOURS POSTIRRADIATION. SPECIES
VARIATIONS BETWEEN RODENTS AND PRIMATES MAY ACCOUNT
FOR DIFFERENT RESPONSES OF FLUORESCENT URINARY
PRODUCTS AFTER IRRADIATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 673 584 6/18

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

ACUTE SOMATIC EFFECTS IN PRIMATES OF PROTONS TO 400
MEV, (U)

67 9P LINDSAY, IAN R. DALRYMPLE,

GLENN V. ;

REPT. NO. SAM-TR-65-284

PROJ: AF-7757

TASK: 775704

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN RADIATION RESEARCH, SUPPL 7
P330-335 1967.

DESCRIPTORS: (*PROTONS, *RADIOBIOLOGY), RADIATION
EFFECTS, RADIATION DOSAGE, MORTALITY RATES, DOSE RATE,
PENETRATION, TISSUES(BIOLOGY), PRIMATES (U)

THE RESULTS OF STUDIES WITH PROTONS THAT PENETRATE
ONLY THE SUPERFICIAL TISSUES AND PROTONS THAT HAVE
SUFFICIENT RANGE TO PENETRATE THE ENTIRE BODY
THICKNESS OF THE PRIMATE ARE DISCUSSED. THE
RBE'S OF SEVERAL ENERGIES OF PROTONS AND THE
ETIOLOGY OF DEATHS AFTER IRRADIATION ARE CONSIDERED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 676 008 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV

DEVELOPMENTS IN RADIATION. (U)

DESCRIPTIVE NOTE: SURVEYS OF FOREIGN SCIENTIFIC AND
TECHNICAL LITERATURE,

AUG 68 248P SCHIROKI, L. L. ;
REPT. NO. ATD-68-126

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, REPORTS), RADIATION
HAZARDS, SPACE FLIGHT, COSMIC RAYS, SAFETY, RADIATION
EFFECTS, RADIOPROTECTIVE AGENTS, HEMOPOIETIC SYSTEM,
RADIATION TOLERANCE, RADIATION INJURIES, RADIATION
SICKNESS, REVIEWS, USSR (U)

THE REPORT REFLECTS SOVIET ACHIEVEMENTS,
CAPABILITIES, TRENDS, AND PROBLEMS IN RADIATION
DETECTION, PROTECTION AND TREATMENT, BASED ON
SOVIET AND EAST EUROPEAN OPEN LITERATURE FROM
1964 TO DATE. THE DOCUMENT IS GROUPED INTO 4
PARTS: RADIATION UNDER SPACEFLIGHT CONDITIONS;
RADIATION BIOLOGICAL EFFECTS; RADIATION
PROTECTIVE AGENTS; AND PROPHYLAXIA AND THERAPY OF
RADIATION INJURIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 678 365 6/3 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ACUTE MORTALITY OF MICE AND RATS EXPOSED TO MIXED
GAMMA-NEUTRON RADIATIONS OR TO X RAYS. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 68 30P STRIKE, T. A. ; SEIGNEUR, L.
J. ; STANLEY, R. E. ;
REPT. NO. AFRR1-SR68-6

UNCLASSIFIED REPORT

DESCRIPTORS: (*RODENTS, RADIATION EFFECTS), (*RADIATION
EFFECTS, *MORTALITY RATES), WHOLE BODY IRRADIATION,
GAMMA RAYS, NEUTRONS, X RAYS, MICE, RATS, DOSE RATE,
SURVIVAL (PERSONNEL), LETHAL DOSAGE, FAST NEUTRONS (U)

MORTALITY DATA FOR C57BL MICE AND SPRAGUE-
DAWLEY RATS WERE COLLECTED AS A PART OF THE PROGRAM
TO BIOLOGICALLY CHARACTERIZE AFRR1-TRIGA REACTOR
RADIATIONS AND TO PROVIDE REFERENCE INFORMATION FOR
FUTURE STUDIES. UNILATERAL WHOLE BODY EXPOSURES TO
MIXED GAMMA-NEUTRON RADIATIONS FROM THE REACTOR OR TO
250 KVP X RAYS WERE CARRIED OUT OVER A RANGE OF
MIDLINE TISSUE DOSES FROM 370 TO 875 RADS. THE 30-
DAY MEDIAN LETHAL DOSES WERE CALCULATED TO BE 589 AND
432 RADS FOR MICE EXPOSED TO THE X RAYS AND TO THE
REACTOR RADIATIONS, RESPECTIVELY. THE
CORRESPONDING VALUES FOR THE RAT EXPOSURES WERE 740
AND 434 RADS. USING THE LD50/30 VALUES AS THE
END POINTS FOR COMPARISON, THE REACTOR RADIATIONS
WERE 1.4 AND 1.7 TIMES MORE EFFECTIVE IN MICE AND
RATS, RESPECTIVELY, THAN WERE THE X RAYS. THE
SURVIVAL TIMES OF THE MICE AND RATS EXPOSED TO
REACTOR RADIATIONS WERE SIGNIFICANTLY LESS THAN THOSE
OF THE ANIMALS EXPOSED TO SIMILAR DOSES OF X RAYS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 680 403 6/18 6/16
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

MEASURING IRON METABOLISM IN HEMATOPOIETIC CENTERS
USING 59FE IN THE PRESENCE OF 51CR AND
125I. (U)

DESCRIPTIVE NOTE: REPT. FOR JAN-MAR 68,
SEP 68 12P STRONG, GUY M. ; LOGSDON,
DONALD F. ; GREEN, JAMES F. ;
REPT. NO. SAM-TR-68-92
PROJ: AF-7755
TASK: 775502

UNCLASSIFIED REPORT

DESCRIPTORS: (*IRON, *METABOLISM), (*RADIOBIOLOGY,
METABOLISM), LIVER, SPLEEN, HEMOGLOBIN, RADIOACTIVE
ISOTOPES, CHROMIUM, IODINE, SCINTILLATION COUNTERS (U)

THE 59FE CONCENTRATION IN THE HEMATOPOIETIC
CENTERS (SACRUM, LIVER, AND SPLEEN) CAN BE
ACCURATELY AND REPRODUCIBLY DETERMINED WITH A RATE
METER, A PHOTOMULTIPLIER PROBE, AND A SCINTILLATION
CRYSTAL DETECTION SYSTEM. WHEN THE THREE ISOTOPES
51CR, 125I, AND 59FE ARE PRESENT, A 10 MM. LEAD
FILTER SCREENS OUT ESSENTIALLY ALL OF THE CHROMIUM
AND IODINE ISOTOPE ACTIVITY WHILE ALLOWING 60% OF
THE 59FE ACTIVITY TO PASS. THE USE OF A CONSTANT
STANDARD AND THE CALCULATION OF THE R FACTOR
(AREA OF RADIATION SITE/AREA OF STANDARD) MAKES
DECAY CORRECTION UNNECESSARY. SINCE IRON
METABOLISM IS NORMALLY MEASURED AS PART OF A LARGER
STUDY OF ERYTHROKINETICS AND BLOOD PARAMETERS, THIS
TECHNIC ALLOWS TWO OR MORE ISOTOPE STUDIES OF
HEMATOPOIETIC CENTERS TO BE CONDUCTED SIMULTANEOUSLY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 680 611 6/18

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EARLY INCREASE IN THE MISCIBLE DEOXYCYTIDINE POOL IN
RATS AFTER X IRRADIATION, (U)

NOV 68 20P GURI, CHARLES D. ; MINOT,
HENRY J. ; SWINGLE, KARL F. ;
REPT. NO. USNRDL-TR-68-138
PROJ: MR005.08-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*WHOLE BODY IRRADIATION, RATS),
(*PYRIMIDINES, METABOLISM), X RAYS, LABELED SUBSTANCES,
HALF LIFE, BLOOD PLASMA, BLOOD CHEMISTRY, RADIATION
EFFECTS (U)
IDENTIFIERS: CYTIDINE, DEOXYCYTIDINE (U)

INTRAPERITONEAL AND INTRAVENOUS INJECTIONS OF
TRACER QUANTITIES OF ³H- OR ¹⁴C-LABELED
DEOXYCYTIDINE (CDR) WERE USED TO INVESTIGATE THE
BIOLOGIC HALF-LIFE, THE MISCIBLE POOL SIZE, AND THE
TURNOVER RATE OF CDR IN NORMAL AND X-IRRADIATED
RATS. THE SPECIFIC ACTIVITY OF HIGHLY PURIFIED
CDR ISOLATED FROM BLOOD PLASMA SAMPLES TAKEN AT
VARIOUS TIMES AFTER INJECTION OF THE TRACER CDR
WAS USED AS THE BASIS FOR CALCULATING THESE VALUES.
THE MEAN VALUES OBSERVED FOR NORMAL RATS WERE:
BIOLOGIC HALF-LIFE 116 MINUTES, MISCIBLE POOL 790
MICRO G/RAT (100 TO 180 G), AND TURNOVER RATE 7.0
MG/24 HOURS/RAT. THE MISCIBLE POOL OF CDR
APPEARED TO BE NON-UNIFORM, WITH THE INTRACELLULAR
CONCENTRATION APPRECIABLE HIGHER THAN THE GENERAL
BODY-WATER CONCENTRATION. ABOUT ONE-THIRD OF THE
TOTAL MISCIBLE CDR APPEARED TO BE INTRACELLULAR.
AFTER RELATIVELY LOW DOSES OF WHOLE-BODY X-
IRRADIATION (25 TO 100 RADS), THERE WERE
ALTERATIONS IN THE TURNOVER KINETICS OF CDR, BUT
THE PRESENCE OF NON-STEADY STATE MADE COMPUTATION OF
THE ABOVE THREE VALUES IMPOSSIBLE. HOWEVER, THE
DATA ARE FULLY CONSISTENT WITH AN INCREASE IN THE
MISCIBLE POOL SIZE OF CDR, OCCURRING AS EARLY AS
1 HOUR POSTIRRADIATION. THE DATA DO NOT PROVIDE
INFORMATION AS TO THE MECHANISM FOR THIS APPARENT
INCREASE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 681 465 6/18

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

EARLY EFFECTS OF 150-MEV PROTON IRRADIATION IN
RHESUS MONKEYS.

(U)

DESCRIPTIVE NOTE: REPT. FOR JUL-NOV 67,
SEP 68 15P TRAYNOR, JOSEPH E. ; SIEGAL,
ALAN M. ;
REPT. NO. SAM-TR-68-87
PROJ: AF-7757
TASK: 775704

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *RADIATION EFFECTS),
MONKEYS, PROTON BEAMS, MORTALITY RATES, HEMATOLOGY,
SURVIVAL (PERSONNEL), LETHAL DOSAGE, TEST METHODS (U)
IDENTIFIERS: COMPARISON (U)

RHESUS MONKEYS WERE EXPOSED TO 150-MEV PROTON
IRRADIATION AT 11 RADS PER MINUTE. AFTER EXPOSURE,
THE ANIMALS WERE OBSERVED FOR CLINICAL CHANGES AND
MORTALITY. HEMATOLOGIC STUDIES WERE PERFORMED UP
TO 80 DAYS AFTER EXPOSURE. ON THE BASIS OF ACUTE
MEDIAN LETHAL DOSE, MEAN SURVIVAL TIME, CLINICAL
OBSERVATIONS, AND BLOOD CELL DEPRESSION, AN RBE OF
UNITY WAS ASSIGNED WHEN COMPARING THE 150-MEV
PROTON EXPOSURES WITH 2-MEV X-RAY EXPOSURES. A
DECREASE IN MEDIAN LETHAL DOSE WAS NOTED WITH LOWERED
DOSE RATE WHEN PROTON EXPOSURES AT 57 RADS PER MINUTE
AND 11 RADS PER MINUTE WERE COMPARED.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 683 364 6/18
ARMY BIOLOGICAL LABS FREDERICK MD

RADIOBIOLOGY IN THE USSR; UTILIZATION OF RADIATION
AND RADIOISOTOPES IN BIOLOGY AND MEDICINE IN THE
USSR. (U)

JUL 68 18P
REPT. NO. TRANS-325

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF RUSSIAN LANGUAGE
ARTICLES.

DESCRIPTORS: (*RADIOBIOLOGY, USSR), NUCLEAR RADIATION,
RADIOACTIVE ISOTOPES, BLOOD COAGULATION, BLOOD
TRANSFUSION, BLOOD DISEASES, CHEMICAL REACTIONS,
SYNTHESIS(CHEMISTRY), RADIATION EFFECTS (U)

CONTENTS: HEMATOLOGICAL RESEARCH;
CHEMOSYNTHESIS; HYPOTHERMY; RADIATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 684 213 6/18 6/16
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION ESTABLISHMENT
OTTAWA (ONTARIO)

THE EFFECT OF RADIOPROTECTIVE AGENTS ON
ERYTHROPOIESIS IN IRRADIATED MICE, (U)

AUG 68 8P VITTORIO, P. V. ; WATKINS, E.
A. ; DZIUBALO-BLEHM, S. ;
REPT. NO. DCBRE-568

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN CANADIAN JOURNAL OF
PHYSIOLOGY AND PHARMACOLOGY, V47 N1 P65-71 1969. NO
COPIES FURNISHED.

DESCRIPTORS: (*RADIOPROTECTIVE AGENTS, *ERYTHROCYTES),
RADIATION EFFECTS, PROTECTION, SURVIVAL (PERSONNEL),
MICE, TOXINS AND ANTITOXINS, HEMOPOIETIC SYSTEM,
SEROTONIN, IRON, BLOOD, SPLEEN, LIVER, CANADA (U)

THE RADIOIRON TEST (I.E. 59FE UPTAKE BY BLOOD,
SPLEEN, AND LIVER) WAS USED TO EVALUATE THE DEGREE
OF PROTECTION (1 DAY AFTER IRRADIATION) AND
EFFECT ON RECOVERY (7 DAYS AFTER IRRADIATION) OF
THE ERYTHROPOIETIC SYSTEM WHEN RADIOPROTECTIVE AGENTS
WERE ADMINISTERED. IN BLOOD, SPLEEN, AND LIVER,
AET ADMINISTERED PRIOR TO IRRADIATION CAUSED A
DECREASED RADIATION EFFECT ON 59FE UPTAKE 1 DAY
AFTER IRRADIATION, AND A SUBSEQUENT PARALLEL RETURN
WITH THE IRRADIATED NONPROTECTED GROUP TO THE CONTROL
VALUE. THIS INDICATED THAT THE EARLY RECOVERY BY
THE PROTECTED GROUP WAS PROBABLY DUE TO LESS INITIAL
DAMAGE. THE AMOUNT OF PROTECTION AFFORDED THE
ERYTHROPOIETIC SYSTEM BY SULFHYDRYL AGENTS WAS IN
GOOD AGREEMENT WITH IRRADIATION SURVIVAL STUDIES AND
INDICATED THAT A GOOD SYLFHYDRYL RADIOPROTECTIVE
AGENT PROVIDED GOOD PROTECTION, AND A POOR SULFHYDRYL
RADIOPROTECTIVE AGENT PROVIDED POOR PROTECTION TO THE
ERYTHROPOIETIC SYSTEM. THUS THE RADIOIRON TEST IS
A GOOD METHOD TO EVALUATE SULFHYDRYL COMPOUNDS AS
RADIOPROTECTIVE AGENTS. ENDOTOXIN DEMONSTRATED
POOR CORRELATION BETWEEN THE EARLY (1 DAY)
ERYTHROPOIETIC EFFECT AND SURVIVAL IN IRRADIATED
MICE, BUT RECOVERY STUDIES (7DAYS) SHOWED MUCH
BETTER AGREEMENT. THE BIOLOGICAL AMINE SEROTONIN
PRODUCED POORER INITIAL PROTECTION TO THE
ERYTHROPOIETIC SYSTEM AND SLOWER RECOVERY THAN AET
EVEN THOUGH THE DOSE REDUCTION FACTOR OF EACH WAS
COMPARABLE. SEROTONIN MUST, THEREFORE, PROTECT
OTHER SYSTEMS WHICH THEN CONTRIBUTE TO THE EVENTUAL
RECOVERY OF THE ERYTHROPOIETIC SYSTEM, AND SURVIVAL. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 685 373 6/18 9/3 6/12
ARMY BIOLOGICAL LABS FREDERICK MD

THE ALL-UNION CONFERENCE ON THE APPLICATION OF
RADIOELECTRONICS IN BIOLOGY AND MEDICINE (2ND), (U)

JUL 68 4P MANDELTSVAI, YU. B. ;
REPT. NO. TRANS-916

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MEDITSINSKAYA
RADIOLOGIYA (USSR) V7 N8 P100-101 1962.

DESCRIPTORS: (*ELECTRONIC EQUIPMENT, *RADIOBIOLOGY),
MEDICAL RESEARCH, NEOPLASMS, DIAGNOSIS(MEDICINE), BLOOD
CIRCULATION, RADIOACTIVE ISOTOPES,
ELECTROENCEPHALOGRAPHY, PHARMACOLOGY, SYMPOSIA, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

AT 11 SECTIONAL MEETINGS, MORE THAN 100 REPORTS
WERE MADE. ONE OF THE SECTIONS WAS DEVOTED TO
ELECTRONIC EQUIPMENT IN PHYSIOLOGICAL RESEARCH USING
ISOTOPES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 685 486 6/18 6/5
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

BIOLOGICAL ACTION OF HIGH-ENERGY PROTONS, VOLUME
2,

(U)

OCT 68 320P GRIGOREVA, YU. G. ;
REPT. NO. FTU-MT-24-150-68-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
VOLUME 2, BIOLOGICHESKOE DEISTVIE PROTONOV
VYSOKIKH ENERGII (K OTSENKE RADIATIONNOI
OPASNOSTI KOSMICHESKIKH POLETOV), MOSCOW, 1967 P1-
508. SEE ALSO VOLUME 1, AD-685 622.

DESCRIPTORS: (*PROTONS, *RADIOBIOLOGY), (*AEROSPACE
MEDICINE, RADIOBIOLOGY), (*SPACE BIOLOGY, RADIOBIOLOGY),
PLANTS(BOTANY), SAFETY, BONE MARROW, GAMMA RAYS,
MICROORGANISMS, ALGAE, GROWTH(PHYSIOLOGY), USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THIS MONOGRAPH DEALS WITH RADIOBIOLOGICAL PROBLEMS
WHICH MUST BE SOLVED BEFORE MAN CAN MASTER OUTER
SPACE. IT DEALS IN PARTICULAR WITH THE IMMEDIATE
AND REMOTE EFFECTS OF IONIZING RADIATION ON MAN.
IT CONSISTS OF SEVEN CHAPTERS, SOME OF WHICH
CONTAIN SEVERAL SEPARATE ARTICLES. THESE ARE BY
VARIOUS AUTHORS WHO CITE THE RESULTS OF THEIR OWN
EXPERIMENTS AND ALSO REFER VERY EXTENSIVELY TO OTHER
INVESTIGATIONS, BOTH SOVIET AND FOREIGN. THESE
ARTICLES ARE CONSOLIDATED UNDER THE FOLLOWING MAIN
HEADINGS: PHYSICAL ASPECTS OF RADIATION SAFETY OF
SPACE FLIGHT; BIOLOGICAL FOUNDATIONS FOR RADIATION
SAFETY OF SPACE FLIGHTS; MODEL RADIOBIOLOGICAL
INVESTIGATIONS OF THE ACTION OF HIGH-ENERGY PROTONS;
BIOLOGICAL ACTION OF PROTONS ON MAMMALS AND BIRDS;
RADIOBIOLOGICAL EFFECTS OF THE ACTION OF PROTONS ON
PLANTS; CLINICO-PHYSIOLOGICAL OBSERVATIONS OF
PERSONS WORKING ON ACCELERATORS; PROPHYLAXIS AND
THERAPY OF PROTON INJURIES; RADIOBIOLOGICAL
MATERIALS AS THE BASIS FOR THE LOCAL PROTECTION OF
ASTRONAUTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 689 096 6/18 6/1

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

EFFECT OF X RAYS AND 60CO GAMMA RAYS ON THE
LIVER ENZYME SYSTEM RESPONSIBLE FOR FATTY ACID
SYNTHESIS.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,

APR 69 22P CATRAVAS, G. N. ;

REPT. NO. AFRR1-SR69-7

UNCLASSIFIED REPORT

DESCRIPTORS: (*ENZYMES, RADIATION EFFECTS), FATTY ACIDS,
METABOLISM, LIVER, BIOSYNTHESIS, GAMMA RAYS, X RAYS, IN
VIVO ANALYSIS, RADIATION DOSAGE, RATS, BLOOD CHEMISTRY,
WHOLE BODY IRRADIATION (U)

THE REPORT DESCRIBES EFFECTS OF IN VIVO EXPOSURE TO
X RAYS AND 60CO GAMMA RAYS ON THE FATTY ACID
SYNTHESIZING LIVER ENZYME SYSTEM. BOTH FED AND
FASTED YOUNG FEMALE SPRAGUE-DAWLEY RATS WERE
UTILIZED IN THESE STUDIES. ALL IRRADIATED ANIMALS
RECEIVED A SINGLE WHOLE-BODY EXPOSURE OF 1200 R AT
20 R/MIN. THE IRRADIATED ANIMALS AS WELL AS SHAM
IRRADIATED CONTROLS WERE SACRIFICED AT PREDETERMINED
TIMES AFTER EXPOSURE AND CELL-FREE LIVER HOMOGENATES
WHICH CONTAINED THE ENZYME SYSTEM UNDER INVESTIGATION
WERE PREPARED. IT WAS FOUND THAT THE ACTIVITY OF
THE LIVER ENZYME SYSTEM RESPONSIBLE FOR THE
BIOSYNTHESIS OF FATTY ACIDS IS GREATLY STIMULATED BY
X OR 60CO GAMMA RAYS AND THAT THE CYTOPLASMIC
SOLUBLE ENZYMES ARE AFFECTED BY RADIATION TO A MUCH
GREATER EXTENT THAN THE MITOCHONDRIAL ENZYMES.
BLOOD GLUCOSE DETERMINATIONS WERE CARRIED OUT IN
IRRADIATED AND CONTROL RATS AS WELL AS IN RATS WHICH
WERE MADE ALLOXAN DIABETIC. THE RESULTS INDICATE
THAT THE ENHANCEMENT OF ENZYME ACTIVITY OBSERVED IS
NOT DUE TO AN INCREASE IN THE BLOOD GLUCOSE LEVEL OF
THE ANIMAL AS A RESULT OF EXPOSURE TO RADIATION BUT
TO SOME OTHER FACTOR THE NATURE OF WHICH HAS NOT YET
BEEN ELUCIDATED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 689 941 6/18 6/15
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION ESTABLISHMENT
OTTAWA (ONTARIO)

THE EFFECT OF RADIOPROTECTIVE AGENTS ON STEM CELL
RECOVERY AFTER IRRADIATION, (U)

JUL 68 13P VITTORIO, P. V. ; DZIUBALO-
BLEHM, S. ; AMEY, E. A. ;
MONITOR: DREO 586

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN RADIATION RESEARCH, V37 N3
P653-664 MAR 69. NO COPIES FURNISHED.

DESCRIPTORS: (*HEMOPOIETIC SYSTEM, RADIOPROTECTIVE
AGENTS), CELLS(BIOLOGY), RADIATION DOSAGE, RECOVERY,
BLOOD, SPLEEN, SURVIVAL(PERSONNEL), MICE, IRON, UREA,
BROMIDES, SEROTONIN, AMINO ACIDS, ORGANIC SULFUR
COMPOUNDS, CANADA (U)
IDENTIFIERS: HOMOCYSTEINE, PENICILLAMINE, PSEUDOURA/
2-(2-AMINOETHYL)-2-THIO (U)

ERYTHROPOIETIC STEM CELL DAMAGE AND RECOVERY AFTER
TREATMENT WITH RADIO-PROTECTIVE AGENTS FOLLOWED BY
GAMMA IRRADIATION WAS MEASURED IN TRANSFUSION-INDUCED
POLYCYTHEMIC MICE IN CONJUNCTION WITH 59FE RED CELL
INCORPORATION AS THE INDICATOR OF ERYTHROPOIETIC
ACTIVITY. IN IRRADIATED MICE, THE ADMINISTRATION
OF S-2 AMINOETHYL ISOTHIUREA DIHYDROBROMIDE
(AET) PRIOR TO IRRADIATION RESULTS IN LESS INITIAL
DAMAGE TO THE BLOOD AND SPLEEN, AND THIS IS
RESPONSIBLE FOR THE EARLIER RECOVERY OF THE
ERYTHROPOIETIC SYSTEM. BLOOD AND SPLEEN 59FE
VALUES AT 1 OR 7 DAYS AFTER IRRADIATION WITH 200 OR
700 RADS, RESPECTIVELY, CAN BE USED TO COMPARE THE
RELATIVE VALUE OF DIFFERENT SULFHYDRYL AGENTS IN
AIDING SURVIVAL. USING THE SPLIT-DOSE TECHNIQUE,
IT WAS SHOWN THAT AET GIVEN PRIOR TO THE SECOND
RADIATION DOSE PROVIDED PROTECTION TO THE
HEMATOPOIETIC SYSTEM AND INCREASED SURVIVAL.
HOWEVER, AET, PRIOR TO THE FIRST RADIATION DOSE
(200 RADS), DID NOT PRODUCE ANY INCREASED
PROTECTIVE EFFECT OVER THAT PRODUCED BY THE FIRST
RADIATION DOSE WHEN THE MICE WERE IRRADIATED 10 DAYS
LATER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 689 947

6/18

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

HISTOCHEMICAL INVESTIGATION OF THE MUCOSA OF THE
EXTERIORIZED SMALL INTESTINE OF THE RAT EXPOSED TO
X-RADIATION,

(U)

69 19P JERVIS, HELEN R. ; DONATI,
ROBERT M. ; STROMBERG, LAWAYNE R. ; SPRINZ,
HELMUTH ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN STRAHLENTHERAPIE. ARCHIV
FUER KLINISCHE UND EXPERIMENTELLE RADIOLOGIE, V137
N3 P326-343 1969.

SUPPLEMENTARY NOTE: LIMITED NUMBER OF COPIES CONTAINING
COLOR OTHER THAN BLACK AND WHITE ARE AVAILABLE UNTIL STOCK
IS EXHAUSTED. REPRODUCTIONS WILL BE MADE IN BLACK AND
WHITE ONLY.

DESCRIPTORS: (*INTESTINES, *RADIATION EFFECTS), X RAYS,
RATS, MORPHOLOGY(BIOLOGY), HISTOLOGY, INHIBITION,
ENZYMES, METABOLISM, NECROSIS, LIPIDS

(U)

IDENTIFIERS: MORPHOLOGY, MUCOSA

(U)

IRRADIATION OF THE EXTERIORIZED SMALL INTESTINE OF
RATS WITH 2000 R X-RAYS, THE REST OF THE BODY
BEING SHIELDED, RESULTS IN A DISCONTINUOUS MUCOSAL
INJURY OF VARYING INTENSITY, RANGING FROM MILD CRYPT
LESIONS REPAIRED IN 2 DAYS TO EXTENSIVE ULCERATIONS.
EVEN IN THE ABSENCE OF SEVERE MORPHOLOGIC CHANGES
AT THE LIGHT MICROSCOPIC LEVEL DURING THE FIRST TWO
DAYS AFTER RADIATION, THE ENZYMATIC ACTIVITY OF THE
EPITHELIAL CELLS IS ALTERED AND ABSORPTION FROM THE
LUMEN AND SYNTHESIS OF SULFATED MUCINS IN THE GOBLET
CELLS ARE DEPRESSED. SUPPRESSION OF
HISTOCHEMICALLY DEMONSTRABLE ENZYMATIC ACTIVITY IN
THE ABSORPTIVE CELLS IS ASSOCIATED WITH SEVERE
PATHOLOGIC CHANGES. REGENERATION IN THE MORE
SEVERELY AFFECTED AREAS BEGINS AT 4-5 DAYS AFTER
EXPOSURE AND, IN RATS WHICH DO NOT SUCCOMB TO THE
ACUTE INTESTINAL RADIATION SYNDROME, IS STILL
INCOMPLETE 4 WEEKS AFTER IRRADIATION. IN THESE
AREAS RADIATION MAY EFFECT THE REGENERATIVE CELLS OF
THE CRYPTS LEADING TO AN INCREASE IN CELL SIZE, AND
TO GROSS IRREGULARITIES OF THE MUCOSAL STRUCTURE.
THE MUCOSAL ENZYMATIC FUNCTIONS AND THE ABSORPTION
OF LIPIDS REMAIN DEPRESSED AND SULFATION OF MUCIN IS
IMPAIRED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 691 153 6/18

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

NEUTRONS IN RADIOBIOLOGICAL EXPERIMENTS, (U)

NOV 68 297P ISAEV, B. M. ; BREGADZE, YU.

I. ;

REPT. NO. FTD-MT-24-258-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
NEITRONY V RADIOBIOLOGICHESKOM EKSPERIMENTE, MOSCOW,
1967 P1-292.

DESCRIPTORS: (*NEUTRONS, *RADIOBIOLOGY), RADIATION
EFFECTS, DOSE RATE, PARTICLES, MEASUREMENT, BIOPHYSICS,
USSR (U)

THE METHODOLOGY OF RADIO BIOLOGICAL EXPERIMENTS USING
RADIOACTIVE ISOTOPES AS NEUTRON SOURCES IS DISCUSSED
AS ARE ACCELERATORS AND REACTORS. THE PHYSICAL
MECHANISMS OF NEUTRON INTERACTION WITH BIOLOGICAL
OBJECTS, METHODS OF MEASURING AND CALCULATING THE
ABSORBED DOSES, AND ARE CONSIDERED 'QUALITY' OF
IRRADIATION, DETERMINED BY ITS BIOLOGICAL
EFFECTIVENESS IS STUDIED IN DETAIL. MEASURING AND
CALCULATING THE DISTRIBUTION OF ABSORBED DOSES
ACCORDING TO LINE AT ENERGY LOSS IS DISCUSSED.
THESE PARAMETERS CHARACTERIZING THE INTERACTION OF
RADIATION WITH THE MATERIAL MUST BE CONSIDERED DURING
THE FORMULATION OF QUALITATIVE RADIOBIOLOGICAL
INVESTIGATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 692 342 6/13 6/18
FORT DETRICK FREDERICK MD

PATHOLOGICAL CHANGES IN RABBITS INJECTED WITH
PASTEURELLA TULARENSIS KILLED BY IONIZING RADIATION,

(U)

JAN 69 6P FINEGOLD, MILTON J. ; PULLIAM,
JAMES D. ; LANDAY, MARSHALL E. ; WRIGHT, GEORGE
G. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF INFECTIOUS
DISEASES, V119 N6 P635-640 JUN 69.

DESCRIPTORS: (*PASTEURELLA TULARENSIS, VACCINES),
(*VACCINES, *RADIOBIOLOGY), COBALT, PATHOLOGY, RABBITS,
SPLEEN, LUNG, KIDNEYS, HEART, LIVER, HEMORRHAGE,
NECROSIS, THROMBOSIS, IMMUNITY, TOXINS AND ANTITOXINS,
CORTICOSTEROID AGENTS, HISTOLOGY, EFFECTIVENESS,
ALLERGIC DISEASES

(U)

SUSPENSIONS OF PASTEURELLA TULARENSIS KILLED BY
EXPOSURE TO IONIZING RADIATION WERE LETHAL FOR
RABBITS WITHIN 24 HR AFTER INTRAVENOUS INJECTION.
THE MAJOR PATHOLOGIC CHANGES WERE EXTENSIVE
HEMORRHAGIC NECROSIS OF THE SPLEEN, FOCAL COAGULATION
NECROSIS OF THE LIVER, PNEUMONITIS, AND GLOMERULAR
CAPILLARY OCCLUSION BY FIBRIN THROMBI. SIMILAR
LESIONS WERE PRODUCED WHEN 2 SMALLER DOSES OF THE
SUSPENSION WERE GIVEN INTRAVENOUSLY 24 HR APART.
THE LOCALIZED SHWARTZMAN REACTION WAS PRODUCED BY
AN INTRADERMAL INJECTION FOLLOWED IN 24 HR BY AN
INTRAVENOUS INJECTION. RABBITS WERE PROTECTED
AGAINST THE LETHAL ACTION OF THE IRRADIATED
SUSPENSION AND AGAINST DEVELOPMENT OF GLOMERULAR
THROMBOSIS BY PRIOR ADMINISTRATION OF A SINGLE DOSE
OF 25 MG OF CORTISONE. THE PATHOLOGICAL FINDINGS
WERE SIMILAR TO THOSE IN RABBITS GIVEN ENDOTOXINS
FROM MENINGOCOCCI OR OTHER GRAM-NEGATIVE ORGANISMS
AND MAY BE INTERPRETED AS A COMBINATION OF THE LOCAL
AND GENERALIZED SHWARTZMAN REACTIONS.
SIMILARITIES WERE ALSO NOTED BETWEEN RESPONSES TO
THE IRRADIATED SUSPENSION AND THOSE OCCURRING DURING
EXPERIMENTAL TULAREMIA INFECTION IN RABBITS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 695 597 6/3 6/18
CALIFORNIA UNIV SAN FRANCISCO SCHOOL OF MEDICINE

'SANDWICH' SOLID PHASE RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN IMMUNOGLOBULINS,

(U)

NOV 68 9P SALMON, SYDNEY E. ; MACKEY,
GAIL ; FUDENBERG, H. HUGH ;
CONTRACT: NONR-3656(12), PHS-HE-05997

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF IMMUNOLOGY, V103
N1 P120-137 JUL 69.

DESCRIPTORS: (*GAMMA GLOBULIN, *QUANTITATIVE ANALYSIS),
(*BIOASSAY, *RADIOBIOLOGY), HUMANS, ANTIGENS +
ANTIBODIES, IMMUNOLOGY, MEASUREMENT

(U)

THIS REPORT DESCRIBES A SENSITIVE, RELATIVELY
SIMPLE SOLID-PHASE 'SANDWICH' RADIOIMMUNOASSAY AND
ITS APPLICATION TO THE QUANTITATIVE MEASUREMENT, AND
ANTIGENIC ANALYSIS, OF IMMUNOGLOBULIN COMPONENTS,
USING ANTISERA TO THE HEAVY CHAINS OF IGG,
IGA AND IGM. WITH THIS TECHNIQUE, THE
SOLID-PHASE, CONSISTING OF DISPOSABLE PLASTIC TUBES
OR COMMERCIAL ISOTHIOCYANATE-SUBSTITUTED PLASTIC
DISCS, IS SENSITIZED BY SEQUENTIAL BINDING OF PURE
ANTIGEN TO THE PLASTIC POLYMER, ANTIBODY TO THE
ANTIGEN, AND UNLABELED OR LABELED ANTIGEN TO THE
ANTIBODY. THE QUANTITATIVE BINDING OF LABELED
ANTIGEN BY THE SANDWICH-SENSITIZED SOLID-PHASE IS
GREATLY ENHANCED AS COMPARED WITH TRACER BINDING BY
SOLID-PHASE POLYMER COATED ONLY WITH ANTIBODY. THE
SANDWICH TECHNIQUE ALLOWS QUANTITATION OF
IMMUNOGLOBULINS IN THE NANOGRAM TO MICROGRAM RANGE,
AND IS APPLICABLE TO A VARIETY OF IMMUNOLOGIC STUDIES
WHERE THIS RANGE OF SENSITIVITY IS REQUIRED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 697 662 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

IN VITRO MOTOR ACTIVITY OF RAT SMALL INTESTINE
FOLLOWING WHOLE-BODY X IRRADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
OCT 69 24P KAGNOFF, M. F. ; HARVEY, S.
A. ;
REPT. NO. AFRI-SR69-15

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, INTESTINES),
(*INTESTINES, CONTRACTION), IN VITRO ANALYSIS, WHOLE
BODY IRRADIATION, X RAYS, RADIATION INJURIES,
PHYSIOLOGY, PATHOLOGY, RATS (U)

IN VITRO CONTRACTIONS OF SMALL INTESTINAL SEGMENTS
WERE STUDIED AT VARYING TIMES FOLLOWING EXPOSURE OF
RATS TO WHOLE-BODY X IRRADIATION. JEJUNAL
CONTRACTIONS WERE MEASURED 20 TO 40 MINUTES, 4 TO 6
HOURS, 1 DAY, 2 DAYS, 3 DAYS, 5 DAYS, 7 DAYS, 11 DAYS
AND 30 DAYS FOLLOWING 25 R, 100 R, AND 700 R,
AS WELL AS DURING THE FIRST 3 DAYS FOLLOWING 1500
R. DUODENUM AND ILEUM WERE STUDIED 2 AND 3 DAYS
FOLLOWING 1500 R. SHAM IRRADIATED RATS SERVED AS
CONTROLS. THE IRREGULAR 'MULTICOMPONENT'
CONTRACTION PATTERN CHARACTERISTIC OF JEJUNAL
SEGMENTS FROM NONIRRADIATED RATS WAS CHANGED TO A
MORE REGULAR PATTERN 2 AND 3 DAYS AFTER 1500 R, 700
R, AND 100 R; IN ADDITION, EXPOSURES WITH 1500
R AND 700 R INCREASED CONTRACTION AMPLITUDE.
TWO AND THREE DAYS FOLLOWING 1500 R, DUODENAL BUT
NOT ILEAL SEGMENTS SHOWED INCREASED REGULARITY.
FURTHERMORE, THE GRADIENT OF CONTRACTION FREQUENCY
(DUODENUM>JEJUNUM>ILEUM) WAS MAINTAINED, BUT
THE GRADIENT OF CONTRACTION REGULARITY (ILEUM>
JEJUNUM>DUODENUM) WAS CHANGED. CHANGES IN
SMALL INTESTINAL MOTOR FUNCTION FOLLOWING WHOLE-BODY
RADIATION MAY SIGNIFICANTLY CONTRIBUTE TO THE
PATHOPHYSIOLOGY OF INTESTINAL RADIATION INJURY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 704 167 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT: 1 JULY 1968-30 JUNE
1969.

(U)

JUN 69 57P
REPT. NO. AFRRI-ARR-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-687 119.

DESCRIPTORS: (*RADIOBIOLOGY, REVIEWS), GASTROINTESTINAL
SYSTEM, IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY,
CYTOLOGY, BONE MARROW, PHYSIOLOGY, BEHAVIOR, PARTIAL
BODY IRRADIATION, BLOOD PLASMA, URINE, AMINO ACIDS,
PROTEINS(CONJUGATED), MAMMALS, MORTALITY RATES,
RADIATION INJURIES, RADIATION EFFECTS, RADIATION DOSA(U)

CONTENTS INCLUDE: ACUTE MORTALITY RESPONSE OF
LARGER MAMMALS TO IONIZING RADIATION;
INVESTIGATION OF INCAPACITATING DOSES OF RADIATION
IN LARGER MAMMALS; THE EFFECT OF PARTIAL-BODY
SHIELDING; ACUTE MORTALITY OF MICE AND RATS EXPOSED
TO 14 MEV NEUTRONS; BEHAVIORAL INCAPACITATION
STUDIES; THE BEHAVIORAL PERFORMANCE OF THE
UNRESTRAINED MONKEY FOLLOWING MIXED GAMMA-NEUTRON
IRRADIATION; IDENTIFICATION OF PROMINENT SITES OF
RADIATION INJURY; HEMOGRAM AND BONE MARROW
DIFFERENTIAL OF THE CHINCHILLA; EFFECTS OF IONIZING
RADIATIONS ON BIOSYNTHESIS OF COMPLEX PROTEINS;
EFFECT OF MIXED GAMMA-NEUTRON RADIATIONS ON PLASMA
AND URINE AMINO ACID LEVELS IN THE RAT; EFFECTS OF
IONIZING RADIATION ON IMMUNE RESPONSES;
POSTIRRADIATION GASTROINTESTINAL INJURY; AND
RADIATION FIELDS PRODUCED BY THE AFRRI-TRIGA
REACTOR.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 705 996 6/18 6/1
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ACTIVITY OF RAT LIVER ENZYMES RESPONSIBLE FOR
GLYCOGEN METABOLISM AFTER WHOLE-BODY IRRADIATION,

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 70 26P CATRAVAS, G. N. ; MCHALE,
C. G. ;
REPT. NO. AFRII-SR70-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, ENZYMES), (*ENZYMES,
LIVER), (*GLYCOGEN, METABOLISM), WHOLE BODY IRRADIATION,
X RAYS, NUCLEAR RADIATION, BIOSYNTHESIS, INHIBITION,
RATS

(U)

THE ACTIVITIES OF LIVER ENZYMES INVOLVED IN THE
BREAKDOWN AND SYNTHESIS OF GLYCOGEN HAVE BEEN
INVESTIGATED IN RATS EXPOSED TO 1200 RADS MIDLINE
KERMA DOSE, FREE-IN-AIR, OF X RAYS OR MIXED GAMMA-
NEUTRON RADIATION. IT WAS FOUND THAT GLYCOGEN
PHOSPHORYLASE AND AMYLO-1,6-GLUCOSIDASE, BOTH OF
WHICH ARE INVOLVED IN THE BREAKDOWN OF GLYCOGEN TO
3GLUCOSE3 UNITS, ARE GREATLY INHIBITED BY BOTH
QUALITIES OF RADIATION. A CONSIDERABLE INHIBITION
IN THE ACTIVITY OF AMYLO-(1,4 TO 1,6)-TRANS-
GLUCOSIDASE (BRANCHING ENZYME) WAS ALSO OBSERVED.
IN CONTRAST, IT WAS FOUND THAT THE ACTIVITY OF
UDP-GLUCOSE-GLYCOGEN TRANSGLUCOSYLASE WHICH IS
RESPONSIBLE FOR THE IN VIVO SYNTHESIS OF 1,4-
POLYSACCHARIDES IS GREATLY ENHANCED WHEN THE ANIMAL
RECEIVED X RAYS OR MIXED GAMMA-NEUTRON RADIATION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 707 468 6/5 6/18
JOHNS HOPKINS UNIV BALTIMORE MD SCHOOL OF MEDICINE

INVESTIGATIONS OF THE PATHOLOGY OF INFECTIOUS
DISEASES AND SUPPLEMENTARY CONSULTATION
SERVICES.

(U)

DESCRIPTIVE NOTE: REPT. NO. 14 (ANNUAL), 1 JUN 69-31
MAY 70,

70 80P DANNENBERG, ARTHUR M. , JR.;
SQUIRE, ROBERT A. ;
CONTRACT: DA-18-064-AMC-104(A)

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN VARIOUS JNLS.

SUPPLEMENTARY NOTE: SEE ALSO ANNUAL REPT. NO. 13,
AD-855 084. ERRATA SHEET INSERTED.

DESCRIPTORS: (*MYCOBACTERIUM TUBERCULOSIS, PATHOLOGY),
(*INFECTIOUS DISEASES, *RADIOBIOLOGY), DISEASES,
PHAGOCYTES, ENZYMES, RIBONUCLEASE, DEOXYRIBONUCLEIC
ACIDS, LEUKOCYTES, WHOLE BODY IRRADIATION,
SKIN(ANATOMY), HISTOLOGY, RESPIRATORY SYSTEM, LUNG,
ENZYMES, RETICULOENDOTHELIAL SYSTEM

(U)

THIS REPORT CONSISTS OF 3 REPRINTS ON RADIATION,
INFECTION AND MACROPHAGE FUNCTION (J.
RETICULOENDOTHELIAL SOCIETY 7, 53-78, 79-90, 91-
108, 1970) AND ONE REPRINT ON MACROPHAGE DNASE
AND RNASE (IBID. 7, 15-31, 1970).

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 708 812 6/18

DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

CHANGES IN ACUTE RADIATION HAZARDS ASSOCIATED WITH
CHANGES IN EXPOSURE GEOMETRY, (U)

JUL 69 10P CLIFFORD, C. E. ;FACEY, R.

A. ;

REPT. NO. DREO-596

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HEALTH PHYSICS PERGAMON
PRESS, V18 P217-225 1970. NO COPIES FURNISHED.
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 9 APR
69.

DESCRIPTORS: (*RADIATION HAZARDS, *WHOLE BODY
IRRADIATION), (*RADIATION DOSAGE, WHOLE BODY
IRRADIATION), HUMAN BODY, GEOMETRY,
EXPOSURE(PHYSIOLOGY), TISSUES(BIOLOGY), X RAYS, GAMMA
RAYS, ABSORPTION(BIOLOGICAL), CANADA (U)

THE RATIOS OF THE MEAN BONE-MARROW DOSE AND OF THE
MIDLINE ABDOMEN DOSE TO THE CORRESPONDING EXPOSURES
WERE MEASURED FOR A PHANTOM EXPOSED IN A ROTATIONAL
GEOMETRY ABOUT ITS VERTICAL AXIS TO BROAD BEAMS OF
X- AND GAMMA-RADIATION INCIDENT AT ANGLES FROM -30
DEGREES TO +75 DEGREES TO THE NORMAL TO THE AXIS OF
ROTATION. THE ENERGY OF THE RADIATION VARIED FROM
0.06 TO 0.66 MEV. THE RATIO OF THE DOSE TO THE
EXPOSURE WAS HEAVILY DEPENDENT ON THE IRRADIATION
GEOMETRY. FOR MANY EXPOSURE CONDITIONS IT WAS SHOWN
THAT THE RATIO OF DOSE TO EXPOSURE OBTAINED AT NORMAL
INCIDENCE WOULD NOT BE SUFFICIENT TO ASSESS THE
HAZARD FOR ACUTE EFFECTS OF WHOLE-BODY IRRADIATION.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 712 532 18/6 6/18 18/4
AMERICAN NUCLEAR SOCIETY WASHINGTON D C SHIELDING AND
DOSIMETRY DIV

PROCEEDING OF INVITED PAPERS SHIELDING AND DOSIMETRY
DIVISION AMERICAN NUCLEAR SOCIETY HELD AT
WASHINGTON, D. C., NOVEMBER 1968, (U)

MAR 70 157P HUDDLESTON, CHARLES M. ;
REPT. NO. ANS-SD-8

UNCLASSIFIED REPORT

DESCRIPTORS: (*FAST REACTORS, SHIELDING), (*RADIATION
HAZARDS, DOSE RATE), REACTOR SHIELDING MATERIALS,
REACTOR SHIELDING CALCULATIONS, CONCRETE, OPTIMIZATION,
RADIOBIOLOGY, REACTOR LATTICE PARAMETERS, RADIATION
MEASURING INSTRUMENTS, NEUTRON SPECTRUM, REVIEWS (U)

THE DOCUMENT DISCUSSES VARIOUS PAPERS ON REACTOR
SHIELDING AND DOSIMETRY, AND THE APPARENT NEED FOR
GREATER RESEARCH IN THESE AREAS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 713 321 6/5 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

SYNERGISM OF THYMUS AND BONE MARROW IN THE
PRODUCTION OF GRAFT-VERSUS-HOST SPLENOMEGALY IN
X-IRRADIATED HOSTS. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT.,
APR 70 14P HILGARD, HENRY R. ;
PROJ: MR005.02
MONITOR: NAVMED MR005.02-0013A-2

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF EXPERIMENTAL
MEDICINE, V132 N2 P317-328, 1 AUG 70.

DESCRIPTORS: (*BONE MARROW, TRANSPLANTATION), (*THYMUS,
TRANSPLANTATION), (*TRANSPLANTATION, *SPLEEN),
(*RADIOBIOLOGY, TRANSPLANTATION), CELLS(BIOLOGY),
IMMUNOLOGY, RESPONSE(BIOLOGY), X RAYS (U)
IDENTIFIERS: *SPLENOMEGALY, *SYNERGISM (U)

GRAFT-VERSUS-HOST SPLENOMEGALY MAY BE ELICITED FROM
500 R X-IRRADIATED F1 HYBRID HOSTS IF THE HOSTS
ARE INJECTED WITH BONE MARROW CELLS AND THYMUS CELLS
FROM PARENTAL STRAIN DONORS. CELLS FROM THYMUS ONLY
OR BONE MARROW ONLY WILL NOT ELICIT GRAFT-VERSUS-HOST
SPLENOMEGALY IN THESE HOSTS. IN THIS REQUIREMENT
FOR CELLS FROM BOTH SOURCES, THE BONE MARROW CELLS
PLAY A NONIMMUNOLOGIC, PROLIFERATIVE ROLE IN THE
SPLENOMEGALY, AND THE THYMUS CELLS CARRY OUT THE
IMMUNOLOGIC ATTACK. THUS THE MECHANISM OF THIS
SYNERGISM IS QUITE DIFFERENT FROM THAT REPORTED FOR
THE HUMORAL IMMUNE RESPONSE TO SHEEP ERYTHROCYTES IN
WHICH BOTH THYMUS AND MARROW INTERACT IN THE
PRODUCTION OF THE SPECIFIC IMMUNOLOGIC RESPONSE
ITSELF. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 713 354 6/18 6/5
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C

EFFECT OF REGIONAL SHIELDING AND BACTERIAL
ENDOCARDITIS IN X-IRRADIATED RATS, (U)

OCT 69 7P HIGHMAN, BENJAMIN ; HANKS, ALAN
R. ; RANTANEN, NORMAN W. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN RADIATION RESEARCH, V43 N3
P691-697 SEP 70.

DESCRIPTORS: (*X RAYS, INFECTIOUS DISEASES),
(*CARDIOVASCULAR DISEASES, BACTERIA), (*PARTIAL BODY
IRRADIATION, RESISTANCE(BIOLOGY)), PERMISSIBLE DOSAGE,
RADIATION DOSAGE, ABDOMEN, HEMOPOIETIC SYSTEM, RADIATION
INJURIES, RATS, SPLEEN, LIVER, RETICULOENDOTHELIAL
SYSTEM (U)

IDENTIFIERS: *BACTERIAL ENDOCARDITIS (U)

IN PREVIOUS STUDIES, IT WAS SHOWN THAT BACTERIAL
ENDOCARDITIS CAN BE READILY INDUCED IN RATS BY
INTRAVENOUS INJECTION OF CERTAIN STRAINS OF BACTERIA
IF THEIR RESISTANCE HAS BEEN LOWERED BY PRIOR X-
IRRADIATION (1) OR ADMINISTRATION OF LARGE DOSES
OF EPINEPHRINE IN OIL. IT HAS ALSO BEEN SHOWN THAT
THE X-RAY DOSE TOLERATED BY ANIMALS MAY BE INCREASED
BY REGIONAL SHIELDING, MORE SO BY SHIELDING THE LOWER
HALF THAN THE UPPER HALF OF THE BODY. THE PURPOSE
OF THE PRESENT STUDY WAS TO DETERMINE THE EFFECT OF
REGIONAL SHIELDING ON THE SUSCEPTIBILITY OF
IRRADIATED RATS TO BACTERIAL ENDOCARDITIS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 713 557 6/18

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J INST FOR
EXPLORATORY RESEARCH

REDUCTION OF BIOLOGICAL EFFECTIVENESS OF X-RAYS AT
VERY HIGH DOSE RATES, (U)

70 12P KRONENBERG, STANLEY ; LUX,
ROBERT ; NILSON, KRISTIAN ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, DOSE RATE), X RAYS,
RADIATION DOSAGE, RADIATION CHEMISTRY, RADIOBIOLOGY,
DOSIMETERS, SEEDS, GERMINATION, FREE RADICALS (U)

IT HAS BEEN OBSERVED THAT RELATIVE BIOLOGICAL
EFFECTIVENESS (RBE) OF X-RAYS OR GAMMA RAYS IS
INDEPENDENT OF DOSE RATE PROVIDED THAT THEIR DELIVERY
TIME IS SHORT COMPARED TO THE RECUPERATION TIME OF
THE ORGANISM. AT HIGHER DOSE RATES, HOWEVER,
SEVERAL EFFECTS MAY MODIFY THE RBE. ONE POSSIBLE
PROCESS IS CONSIDERED HERE: BIOLOGICAL RADIATION
EFFECTS ARE DEPENDENT UPON THE CHEMICAL BEHAVIOR OF
FREE RADICALS PRODUCED IN THE IONIZATION PROCESS.
THESE FREE RADICALS ARE USUALLY CHEMICALLY ACTIVE,
AND CAN PRODUCE PERMANENT DAMAGE BY THEIR INTERACTION
WITH PROTEIN CHAINS. SUPPOSE THE CONCENTRATION OF
THESE RADICALS IS ALLOWED TO COME TO EQUILIBRIUM BY
IRRADIATING A SAMPLE AT A CONSTANT DOSE RATE FOR A
SUFFICIENT TIME. FOR LOW AND MODERATE DOSE RATES
THE RADICAL CONCENTRATION IS SO LOW THAT DIRECT
RADICAL-RADICAL RECOMBINATION MAY BE NEGLECTED. AT
A SUFFICIENTLY HIGH DOSE RATE HOWEVER THIS
RECOMBINATION MAY BECOME SIGNIFICANT. THE REDUCED
RADICAL CONCENTRATION WILL REDUCE THE RBE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 714 124 6/18

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

RADIOBIOLOGICAL CONCEPTS FOR MANNED SPACE
MISSIONS,

(U)

70 9P PICKERING, JOHN E. ;

REPT. NO. SAM-TR-70-267

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AEROSPACE MEDICINE, V41 N2
P159-165 FEB 70.

DESCRIPTORS: (*RADIATION DOSAGE, *SPACE FLIGHT),
RADIATION HAZARDS, RADIOBIOLOGY, THRESHOLDS (PHYSIOLOGY),
AEROSPACE MEDICINE, SPACE ENVIRONMENTS, ASTRONAUTS,
RADIATION MONITORS, SPACE BIOLOGY, NUCLEAR RADIATION (U)
IDENTIFIERS: EXOBIOLOGY (U)

CAREFULLY ESTABLISHED PREMISSION PLANNING DOSES AND
MAXIMUM OPERATIONAL DOSE LIMITS ARE CLEARLY ENHANCED
BY CLINICAL JUDGEMENTS WHEN GO-NO-GO DECISIONS ARE
MADE IN THE EVENT OF AN ASTRONAUT'S EXPOSURE TO
IONIZING RADIATION. THE VERY NATURE OF EXTENDED
LUNAR MISSIONS (EXPLORATION) AND LONG DURATION
LOW EARTH ORBIT MISSIONS ARE CLEAR CASES FOR
EVALUATING MAN'S CLINICAL RESPONSE BEFORE GO-NO-GO
DECISIONS ARE MADE. THERE ARE WELL IDENTIFIABLE
DECISION POINTS IN MISSION PLANS THAT ARE BEST JUDGED
BY CLINICAL RESPONSES IF THE MISSION IS TO AVOID
PERFORMANCE DECREMENT AT CRITICAL TIMES, I.E., AT THE
PEAK OF ASTRONAUT ACTIVITY: DESCENT, EVA,
ASCENT, RENDEZVOUS, TRANSFER, ETC. CAREFUL ON-BOARD
MONITORING OF THE ASTRONAUT'S CONDITION AND JUDICIOUS
RECORDING AND INTERPRETATION OF ACTUAL RADIATION
MANIFESTATIONS WITH RESPECT TO TIME CAN AND SHOULD
DISSUADE PREMATURE OR UNFOUNDED DECISIONS. THIS
PHILOSOPHY HAS ITS GREATEST MERIT IF ONE ACCEPTS THE
TENET THAT MAN IS IN THE SYSTEM TO MAKE OBSERVATIONAL
JUDGMENTS AND ASSESSMENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 714 326 6/16

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

EFFECT OF COBALT UPON IRON ABSORPTION
(34873),

(U)

JAN 70 4P SCHADE, STANLEY G. ; FELSHER,
BERTRAM F. ; GLADER, BERTIL E. ; CONRAD, MARCEL
E. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF THE SOCIETY
FOR EXPERIMENTAL BIOLOGY AND MEDICINE, V134 N3 P741-
743 JUL 70.

DESCRIPTORS: (*IRON, ABSORPTION(BIOLOGICAL)), (*COBALT,
IRON), METABOLISM, INTESTINES, RATS, INHIBITION,
HEMATOLOGY

(U)

THE ADDITION OF COBALT TO ORAL TEST DOSES OF
RADIOIRON DECREASES IRON ABSORPTION. STUDIES WERE
PERFORMED IN RATS TO DETERMINE THE SITE AND
MECHANISMS OF THIS INHIBITION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 714 421 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RELATIVE BIOLOGICAL EFFECTIVENESS OF
IRRADIATION--THE TIME FACTOR IN
IRRADIATION,

(U)

SEP 70 301P DARENSKAYA, N. G. ; KOZNOVA,
L. B. ; AKOEV, I. G. ; NEVSKAYA, G. F. ;
REPT. NO. FTD-HC-23-402-69
PROJ: FTD-60101
TASK: DIA-T69-01-14

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. OTNOSITELNAYA
BIOLOGICHESKAYA EFFEKTIVNOST IZLUCHENII. FAKTOR
VREMENI OBLUCHENIYA, N.P., 1968 P1-57, 70-139, 169-
329.

DESCRIPTORS: (*RADIATION EFFECTS, DOSE RATE),
RADIOBIOLOGY, RADIATION DOSAGE, NUCLEAR RADIATION, X
RAYS, GAMMA RAYS, PROTONS, USSR
IDENTIFIERS: TRANSLATIONS

(U)
(U)

THE BOOK ANALYZES DATA FROM THE LITERATURE AND THE
AUTHORS' ORIGINAL DATA ON THE RELATIVE BIOLOGICAL
EFFECTIVENESS OF VARIOUS IRRADIATION TYPES.
CERTAIN REGULAR RELATIONSHIPS ARE ESTABLISHED. RBE
(RELATIVE BIOLOGICAL EFFECTIVENESS)
COEFFICIENTS FOR VARIOUS IRRADIATIONS HAVE BEEN
ESTABLISHED FOR VARIOUS ANIMAL SPECIES AND BIOLOGICAL
GROUPS. CLINICAL SYMPTOMS OF RADIATION SICKNESS
CAUSED BY VARIOUS RAYS HAVE BEEN STUDIED AND
SYSTEMATIZED. SIMILARLY, THE AUTHORS HAVE
SYSTEMATIZED DATA OBTAINED FROM INVESTIGATIONS OF THE
IRRADIATION TIME FACTOR, METHODOLOGICAL APPROACHES TO
THE STUDY OF THE DOSE STRENGTH, FRACTIONIZATION, AND
THE TOTAL TIME OF IRRADIATION. CONCLUSIONS ARE
DRAWN FROM DATA CONCERNING THE EFFECTS OF THE DOSE
STRENGTH ON MODEL SYSTEMS AND VARIOUS LIVE ORGANISMS,
AS WELL AS ESTABLISHED PATTERNS IN THE EFFECT OF
VARIOUS RANGES OF DOSE STRENGTH IN VARIOUS KINDS OF
RADIATION SICKNESS. A SIMILAR ANALYSIS MADE IT
POSSIBLE TO EVALUATE AND PRESENT INFORMATION ON THE
MECHANISM THROUGH WHICH VARIOUS IRRADIATION DOSES
AFFECT BIOLOGICAL REACTIONS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 715 018 6/1 6/18
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION AND FATE OF EXOGENOUS DNA INTO
CELLS OF NORMAL AND IRRADIATED MAMMALIAN
TISSUES.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
AUG 70 31P LEDOUX, LUCIEN ; CHARLES, POL ;
MAISIN, JEAN-RENE ; MATTELIN, GILBERT ; REMY,
JACQUES ;

CONTRACT: DAJA37-69-C-1106
PROJ: DA-2-N-061102-B-71-D
MONITOR: ARDG(E) E-1294

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, DEOXYRIBONUCLEIC ACIDS),
(*DEOXYRIBONUCLEIC ACIDS, CELLS(BIOLOGY)),
(*CELLS(BIOLOGY), RADIOBIOLOGY), PENETRATION,
ABSORPTION(BIOLOGICAL), MAMMALS, NEOPLASMS,
TISSUES(BIOLOGY), LABELED SUBSTANCES, X RAYS, RADIATION
EFFECTS, RECOVERY, BELGIUM (U)

A CSC1 GRADIENT ANALYSIS OF THE FATE OF EXOGENOUS
LABELLED DNA IN ASCITES TUMOUR CELLS REVEALS THAT
THOSE CELLS TAKE UP THE FOREIGN MATERIAL AND
INTEGRATE IT WITH THEIR OWN DNA AS DOUBLE STRANDED
MOLECULES BOUND BY COVALENT LINKAGES TO THE RECIPIENT
DOUBLE STRANDED DNA. THIS HETERO DUPLEX
SUBSEQUENTLY BECOMES REPLICATED BY THE DIVIDING CELLS
AND IS TRANSMITTED TO THE PROGENY. THE IRRADIATION
OF THE RECIPIENT CELLS INCREASES THE AMOUNT OF DNA
THEY TAKE UP. WHEN BACTERIAL DNA IS INJECTED
INTRAPERITONEALLY IN MICE, LARGE AMOUNTS OF
POLYMERISED EXOGENOUS DNA APPEAR IN THE BLOOD AND
CIRCULATE WITH IT. FOREIGN DNA DOES NOT ASSOCIATE
WITH THE RED BLOOD CELLS, BUT IS TAKEN UP BY LIVING
ORGANS AND TISSUES. THE INJECTION OF HIGH MOLECULAR
DNA IN IRRADIATED MICE INTERACTS WITH THE SEQUENCE
OF EVENTS WHICH FOLLOW IRRADIATION IN SUCH A WAY THAT
THE MOUSE SURVIVAL IS VERY SIGNIFICANTLY IMPROVED.
THE RESTORATIVE EFFECT OF A GIVEN DNA DEPENDS ON
THE MOUSE STRAIN, THE DOSE-RATE AND THE TOTAL DOSE
USED. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 715 541 6/1

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

FERRITIN PRODUCTION IN THE RAT SMALL
INTESTINE,

(U)

FEB 70 9P BERNIER, GEORGE M. ; SCHADE,
STANLEY G. ; CONRAD, MARCEL E. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN BRITISH JNL. OF
HAEMATOLOGY, V19 N3 P361-367 SEP 70.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 26 JAN
70.

DESCRIPTORS: (*FERRITIN, BIOSYNTHESIS), INTESTINES,
RATS, METABOLISM, PHYSIOLOGY, IRON, DOSAGE,
ABSORPTION(BIOLOGICAL), EXCRETION, COBALT

(U)

ADMINISTRATION OF IRON TO RATS INCREASES THE AMOUNT
OF (14C)AMINO ACID INCORPORATION INTO FERRITIN IN
THE RAT INTESTINE. USING A SPECIFIC ANTI-RAT
FERRITIN ANTISERUM, SEVERAL VARIABLES AFFECTING DE
NOVO SYNTHESIS OF FERRITIN IN THE RAT INTESTINE WERE
STUDIED. SYNTHESIS WAS DOSE DEPENDENT IN THE RANGE
OF 1-100 MICROMOLES OF ORAL IRON WITH LARGER DOSES
PRODUCING NO GREATER EFFECT. HOWEVER, SIGNIFICANT
FERRITIN SYNTHESIS WAS EVOKED BY A 150 MICROMOLES
DOSE OF ORAL IRON IN ANIMALS PRETREATED WITH SIMILAR
DOSES OF ORAL IRON 3 AND 6 HR BEFORE THE TEST DOSE.
COBALT, A CATION ABSORBED BY THE INTESTINE IN A
FASHION SIMILAR TO IRON, DID NOT STIMULATE FERRITIN
SYNTHESIS. ORAL AND PARENTERAL IRON ADMINISTRATION
PRODUCED DIFFERENT EFFECTS ON VARIOUS SMALL
INTESTINAL SEGMENTS. ORAL IRON INDUCED SYNTHESIS
CHIEFLY IN THE PROXIMAL SMALL INTESTINE WHILE
INTRAVENOUS IRON PRODUCED IT DOMINANTLY IN THE
TERMINAL ILEUM. THESE LATTER FINDINGS ARE
CONSISTENT WITH THE CONCEPT THAT FERRITIN FUNCTIONS
CHIEFLY AS A BARRIER TO EXCESS IRON ABSORPTION AND AS
AN IMPORTANT MECHANISM FOR IRON EXCRETION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 718 315 6/2 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ELECTROCARDIOGRAPHY IN A RADIATION ENVIRONMENT
BY THE USE OF TELEMETRY. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
OCT 70 24P KIEFFER, V. A. ; TURBYFILL,
C. L. ;
REPT. NO. AFRR1-TN70-6
PROJ: DASA-NWER-XAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, *TELEMETER SYSTEMS),
(*RADIOBIOLOGY, ELECTROCARDIOGRAPHY), MONITORS,
TELEMETERING TRANSMITTERS, HEART, PHYSIOLOGY,
ENVIRONMENT, RADIOACTIVE CONTAMINATION (U)

ELECTROCARDIOGRAPHY USING AN IMPLANTABLE RADIATION
HARDENED TRANSMITTER IS DESCRIBED. THIS TELEMETRY
SYSTEM ALLOWS AN INVESTIGATOR TO RECORD THE
ELECTROCARDIOGRAM (ECG) OF UNRESTRAINED ANIMALS IN
A RADIATION ENVIRONMENT. THE TRANSMITTER AND ITS
USE IN AN INTENSE RADIATION FIELD ARE DESCRIBED.
THE SELECTION OF ELECTRODE PLACEMENT, SURGICAL
IMPLANTATION OF THE TRANSMITTER, AND THE TRANSMISSION
AND RECEPTION OF A SIGNAL REPRESENTATIVE OF THE
ELECTRICAL ACTIVITY OF THE HEART FROM WHICH AN ECG
RECORDING IS MADE ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 720 589 6/18
RAND CORP SANTA MONICA CALIF

INDUCED FIELDS AND HEATING WITHIN A CRANIAL
STRUCTURE IRRADIATED BY AN ELECTROMAGNETIC
PLANE WAVE,

(U)

NOV 70 33P SHAPIRO, A. R. ; LUTOMIRSKI,
R. F. ; YURA, H. T. ;
REPT. NO. P-4458-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*BRAIN, ELECTROMAGNETIC FIELDS),
RADIOBIOLOGY, ELECTRICAL PROPERTIES, MICROWAVES,
MEASUREMENT, ANATOMICAL MODELS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, RADIOFREQUENCY
HEATING (U)

THE INDUCED FIELDS AND THE STATIC HEATING PATTERNS
WITHIN A MULTI-LAYERED SPHERICAL MODEL THAT
APPROXIMATES THE PRIMATE CRANIAL STRUCTURE IRRADIATED
BY PLANE WAVES IN THE MICROWAVE SPECTRUM ARE
CALCULATED. THE RELATION OF THE MODEL TO THE
BIOLOGICAL STRUCTURE AND THE SENSITIVITY OF THE
RESULTS TO THE UNCERTAINTIES IN THE DIMENSIONS AND
ELECTRICAL PROPERTIES OF BIOLOGICAL MATERIAL ARE
INVESTIGATED. A METHOD OF SOLUTION FOR BOTH THE
SCATTERED AND INTERIOR FIELDS FOR A SPHERE WITH AN
ARBITRARY NUMBER OF ELECTRICALLY DIFFERENT CONCENTRIC
LAYERS IS DEVELOPED IN A FORM READILY AMENABLE TO
MACHINE COMPUTATION. IT IS SHOWN THAT THE SEMI-
INFINITE SLAB MODEL IS INAPPROPRIATE FOR CALCULATING
THE MICROWAVE RADIATION DOSAGE TO THE HUMAN HEAD AND
SIMILAR STRUCTURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 720 601 6/3 6/6
INTERNATIONAL INST FOR SCIENTIFIC COOPERATION ULM AN DER
DONAU (WEST GERMANY)

SEMINAR ON CELL AND CELL SYSTEM ECOLOGY,
HELD IN PARIS, (FRANCE), 13-15 JUNE 1969, (U)

DEC 70 39P FLIEDNER, THEODOR M. ;
CONTRACT: DA-ERO-591-69-G-01
MONITOR: ERO E-14-41-P

UNCLASSIFIED REPORT

DESCRIPTORS: (*CELLS(BIOLOGY), *ECOLOGY), (*SYMPOSIA,
*CYTOLOGY), PHYSIOLOGY, MILITARY MEDICINE, MAMMALS,
ENVIRONMENT, ATMOSPHERES, BLOOD CELLS, RADIOBIOLOGY,
DISEASES, HEALING, WOUNDS AND INJURIES, TRANSPLANTATION,
ADAPTATION(PHYSIOLOGY), MICROBIOLOGY, WEST GERMANY (U)

CONTENTS: CELLULAR ECOLOGY - A NEW BRANCH OF
CELL PHYSIOLOGY; RELEVANCE OF CELLULAR ECOLOGY FOR
MILITARY MEDICINE; ECOLOGICAL EXAMPLES OF RELEVANCE
TO MILITARY MEDICINE AT THE LEVEL OF THE WHOLE
ORGANISM (INTERACTION BETWEEN ATMOSPHERIC
ENVIRONMENT AND THE MAMMALIAN ORGANISM, INTERACTION
BETWEEN MICROBIAL ENVIRONMENT AND THE MAMMALIAN
ORGANISM, INTERACTION BETWEEN THE PHYSICO-CHEMICAL
ENVIRONMENT AND THE MAMMALIAN ORGANISM);
ECOLOGICAL EXAMPLES OF RELEVANCE TO MILITARY
MEDICINE AT THE CELL SYSTEM LEVEL (WOUND HEALING,
ECOLOGICAL PROBLEMS IN CELL TRANSPLANTATION). (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 721 699 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

SERIAL RIB MARROW ASPIRATION TECHNIQUE AND
MYELOGRAM FOR ADULT BEAGLES. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
JAN 71 20P WEST, J. E. ; MITCHELL, F.
A. ; VAGHER, J. P. ;
REPT. NO. AFRR1-TN71-1
PROJ: DASA-NWER-XAXM
TASK: D907

UNCLASSIFIED REPORT

DESCRIPTORS: (*BONE MARROW, *RADIATION EFFECTS), DOGS,
CELLS(BIOLOGY), THORAX, RADIOBIOLOGY (U)

A RAPID TECHNIQUE FOR OBTAINING MULTIPLE SERIAL
BONE MARROW ASPIRATION SAMPLES FROM RIBS OF DOGS FOR
DIFFERENTIAL AND TOTAL MARROW CELL COUNTS IS
DESCRIBED. STATISTICAL ANALYSES OF DATA PRESENTED
IN A MYELOGRAM FROM 216 RIB MARROW ASPIRATES FROM 27
ADULT MALE BEAGLES INDICATED NO SIGNIFICANT
DIFFERENCE IN THE CELLULAR COMPOSITION OF MARROW FROM
SEVERAL RIBS SAMPLED BY THIS PROCEDURE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 722 324 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

AN EXAMINATION OF REGENERATING HEPATIC
TISSUE FOLLOWING IN VIVO EXPOSURE TO R.
F. RADIATION.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT.,
MAR 71 30P MDLEES, BYRON D. ; FINCH,
EDWARD D. ; ALBRIGHT, MARION L. ;
PROJ: MF12.524
TASK: MF12.524.015
MONITOR: NAVMED MF12.524.015-0001B-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*TISSUES(BIOLOGY), *REGENERATION), (*RADIO
WAVES, RADIATION EFFECTS), (*CHROMOSOMES, RADIATION
EFFECTS), (*RADIATION EFFECTS, MITOSIS), GENETICS,
RADIOBIOLOGY, LIVER, RADIOFREQUENCY

(U)

IN ORDER TO ELUCIDATE POSSIBLE GENETIC CONSEQUENCES
OF EXPOSURE TO RADIO FREQUENCY RADIATION, ADULT MALE
RATS HAVE BEEN CONTINUOUSLY IRRADIATED FOR UP TO 44
HOURS AFTER THEY HAVE UNDERGONE A PARTIAL
HEPATECTOMY. THE EXPERIMENT, WHICH INVOLVES
MONITORING MITOTIC ACTIVITY AND CHROMOSOMAL
ABERRATIONS IN THE REGENERATING LIVER, WAS CHOSEN
BECAUSE OF ITS DEMONSTRATED SENSITIVITY TO IONIZING
RADIATION DAMAGE. THE EFFECTS OF BOTH PULSED AND CW
IRRADIATION AT 13.12 MHZ WERE INVESTIGATED. ALL
EXPERIMENTS WERE CONDUCTED WITH RADIATION POWER
LEVELS JUST BELOW THE HEATING THRESHOLD. AN
EXTENSIVE COMPARISON OF THE RESULTS FOR CONTROL AND
EXPERIMENTAL ANIMALS HAS FAILED TO REVEAL ANY
STATISTICALLY SIGNIFICANT DIFFERENCES IN MITOTIC
ACTIVITY OR THE NUMBER OF CHROMOSOMAL ABERRATIONS.
IN ADDITION, HISTOLOGIC AND ELECTRON MICROSCOPIC
OBSERVATIONS HAVE REVEALED NO EVIDENCE OF TISSUE
DAMAGE. RESULTS OF THE EXPERIMENT ARE DISCUSSED
VIS-A-VIS PREVIOUSLY REPORTED IN VITRO EXPERIMENTS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 724 294 6/18 6/16
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

HUMORAL ANTIBODY RESPONSES IN NEWBORN
MONKEYS AFTER MIXED GAMMA-NEUTRON
IRRADIATION.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
FEB 71 17P BOWSER, B. T. ; EXUM, E. D.

;
REPT. NO. AFRR1-SR71-1
PROJ: DASA-NWER-XAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *IMMUNOLOGY), (*RADIATION
EFFECTS, ANTIGEN ANTIBODY REACTIONS), IMMUNITY, GAMMA
RAYS, NUCLEAR RADIATION, MONKEYS (U)

NEWBORN MONKEYS EXPOSED TO 200 RADS OF MIXED GAMMA-
NEUTRON RADIATION AND SUBSEQUENTLY INJECTED WITH
BOVINE SERUM ALBUMIN (BSA), INCORPORATED IN SALINE,
PRODUCED ANTIBODY TITERS THAT WERE SIGNIFICANTLY
HIGHER THAN THOSE OBSERVED IN THE CORRESPONDING
NONIRRADIATED CONTROLS ($P < 0.05$). THE TITERS
OF IRRADIATED ANIMALS INJECTED WITH BSA
INCORPORATED IN ADJUVANT (INCOMPLETE FREUND
TYPE) WHILE HIGHER THAN THOSE OF THE NONIRRADIATED
CONTROLS WERE NOT SIGNIFICANTLY DIFFERENT.
IRRADIATED MONKEYS RECEIVING BSA IN ADJUVANT AND
NEOPLASTIC TISSUE SIMULTANEOUSLY EXHIBITED
SIGNIFICANTLY LOWER TITERS THAN THOSE MONKEYS WHICH
WERE ADMINISTERED NEOPLASTIC TISSUES 4 OR MORE DAYS
AFTER BSA INJECTIONS. THE ENHANCED ANTIBODY
RESPONSES SEEN IN THE NEWBORN MONKEY ARE VIEWED AS
UNUSUAL RESPONSES WHILE THE DEPRESSED RESPONSES ARE
RECOGNIZED AS MORE TYPICAL. POSITIVE EXPLANATIONS
FOR BOTH RESPONSES ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 726 557 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
UTILIZATION OF LASERS IN BIOLOGICAL STUDIES
(OB ISPOLZOVANII LAZEROV V BIOLOGICHESKIKH
ISSEDOVANYAKH), (U)

71 19P RUBIN, L. B. ;
REPT. NO. SAM-TT-R-1084-0771

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM USPEKHI SOVREMENNOI
BIOLOGII (USSR) V67(2) 1969.

DESCRIPTORS: (*RADIOBIOLOGY, *LASERS), BIOLOGY,
PHOTOCHEMICAL REACTIONS, BIOPHYSICS, RADIATION EFFECTS,
PHYSIOLOGY, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE ARTICLE DISCUSSES THE QUESTIONS ASSOCIATED WITH
WIDE POSSIBILITIES OF LASER UTILIZATION IN
EXPERIMENTAL BIOLOGY. THE AUTHOR ALSO EMPHASIZES
THE POSSIBILITY OF STUDIES OF ALL POSSIBLE ACTION
MECHANISMS DURING THE INTERACTION OF LASER RADIATION
WITH BIOLOGICAL SYSTEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 728 416 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD
DOSIMETRY FOR NEUTRON RADIATION STUDIES IN
MINIATURE PIGS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAY 71 29P VERRELLI, D. M. ;
REPT. NO. AFRR1-TN71-2
PROJ: DASA-NWER-XAXM

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *SWINE), (*NEUTRONS,
DOSIMETERS), LABORATORY ANIMALS, LETHAL DOSAGE,
INTESTINES, BRAIN, GAMMA RAYS, IONIZATION CHAMBERS,
NEUTRON SPECTRUM (U)

MINIATURE PIG CADAVERS WERE INSTRUMENTED AND
IRRADIATED IN A NEUTRON FIELD (INCIDENT NEUTRON TO
GAMMA KERMA RATIO OF 5-10) AND A GAMMA RAY FIELD
(INCIDENT GAMMA TO NEUTRON KERMA RATIO OF 10-15)
FROM THE AFRR1-TRIGA REACTOR. CHARACTERIZATION
OF THE RADIATION FIELD INCLUDED FREE-IN-AIR
MEASUREMENTS OF THE NEUTRON AND GAMMA RAY COMPONENTS
EMPLOYING THE PAIRED CHAMBER CONCEPT. DEPTH-DOSE
PATTERNS ACROSS THE BRAIN AND INTESTINAL REGIONS WERE
MEASURED FOR EACH OF THE RADIATION FIELDS EMPLOYING A
MINIATURE TISSUE-EQUIVALENT IONIZATION CHAMBER.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 729 161 6/18

JOHNS HOPKINS UNIV BALTIMORE MD DEPT OF PHARMACOLOGY

THE EFFECT OF MICROWAVE IRRADIATION ON THE
TURNOVER RATE OF SEROTONIN AND NOREPINEPHRINE
AND THE EFFECT ON MONOAMINE METABOLIZING
ENZYMES.

(U)

DESCRIPTIVE NOTE: REPT. NO. 2 (FINAL), JUN 67-MAY
71,

AUG 71 33P SNYDER, SOLOMON H. ;

CONTRACT: DADA17-69-C-9144

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEROTONIN, *RADIATION EFFECTS),
(*MICROWAVES, RADIATION EFFECTS), (*NEUROLOGY, RADIATION
EFFECTS), (*LEVARTERENOL, RADIATION EFFECTS),
RADIOBIOLOGY, RATS, BRAIN, ENZYMES, IN VIVO ANALYSIS,
TRYPTOPHAN (U)

IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, *NEUROCHEMISTRY,
DECARBOXYLASES, *ELECTROMAGNETIC RADIATION HAZARDS (U)

THE RESEARCH PROGRAM WAS DIRECTED AT DETECTING
NEUROCHEMICAL ALTERATIONS IN LABORATORY ANIMALS
EXPOSED TO MICROWAVE IRRADIATION AT LEVELS OF 10
MW/SQ CM. AT THIS LOW LEVEL OF IRRADIATION, IT
WAS FOUND THAT AFTER 7 DAYS EXPOSURE FOR 8 HOURS PER
DAY, THERE WAS A MARKED SLOWING OF THE SEROTONIN
TURNOVER RATE WHICH WAS ACCOMPANIED BY A SLIGHT
DECREASE IN THE ACTIVITY OF TRYPTOPHAN DECARBOXYLASE
AND 5-HYDROXYTRYPTOPHAN DECARBOXYLASE. THIS
SUGGESTS THAT MICROWAVE IRRADIATION DECREASED THE
FIRING RATE OF SEROTONIN NEURONS IN THE BRAIN.
SINCE THESE NEURONS ARE KNOWN TO PARTICIPATE IN THE
REGULATION OF SLEEP AND WAKEFULNESS AS WELL AS BODY
TEMPERATURE, THE FINDINGS MAY ACCOUNT FOR CERTAIN OF
THE BEHAVIORAL EFFECTS PURPORTEDLY PRODUCED BY
MICROWAVE EXPOSURE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 732 874 6/1 6/16
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION AND FATE OF EXOGENOUS DNA IN
CELLS OF NORMAL AND IRRADIATED MAMMALIAN
TISSUES.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
AUG 71 54P CHARLES, POL ; WATTERS, C. ;
REMY, JACQUES ; LEDOUX, LUCIEN ;
CONTRACT: DAJA37-70-C-2329
MONITOR: ARDG(E) E-1294-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO FINAL TECHNICAL REPORT
DATED AUG 70, AD-715 018.

DESCRIPTORS: (*DESOXYRIBONUCLEIC ACIDS,
*CELLS(BIOLOGY)), (*RADIOBIOLOGY, DESOXYRIBONUCLEIC
ACIDS), (*RADIOTHERAPY, DESOXYRIBONUCLEIC ACIDS),
NEOPLASMS, BACTERIA, ABSORPTION(BIOLOGICAL), MAMMALS,
TISSUES(BIOLOGY), LABELED SUBSTANCES, BELGIUM (U)

LABELLED BACTERIAL DNA INTRODUCED INTO RATS VIA
THE CAROTID IS AT ONCE DISTRIBUTED AMONG DIFFERENT
ORGANS, SOME BECOMING PROGRESSIVELY INCORPORATED IN
THE ENDOGENOUS DNA. THESE AND OTHER RESULTS
SUGGEST THAT DOUBLE STRANDED ENDOGENOUS AND EXOGENOUS
DNAS ARE COVALENTLY COMBINED. HEAVY LABELLED
MOLECULES CAN BE FOUND IN DNA PREPARED FROM ORGANS
OF RATS INFUSED WITH UNLABELLED MICROCOCCUS
LYSODEIKTICUS DNA AND TRITIATED THYMIDINE. IN
ASCITES TUMOUR CELLS, PENTOBARBITAL DECREASES
INCORPORATION OF TRITIATED THYMIDINE WITHOUT
MODIFYING UPTAKE OF LABELLED BACTERIAL DNA. ON
THE OTHER HAND, DEAE-DEXTRAN INCREASES UPTAKE OF
BACTERIAL DNA, BUT DNASE REMOVES 90% OF THE
LABEL TAKEN UP. THE RELATIONSHIP OF THESE RESULTS
TO THE POST-IRRADIATION THERAPY WITH DNA IS
DISCUSSED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 742 513 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

MORPHOLOGICAL CHARACTERISTICS OF THE BIOLOGICAL
ACTION PRODUCED BY MAGNETIC FIELDS
(MORFOLOGICHESKAYA KHARAKTERISTIKA
BIOLOGICHESKOGO DEISTVIYA MAGNITNYKH
POLEI),

(U)

JAN 72 20P TOROPTSEV, I. V. ;
REPT. NO. FSTC-HT-23-349-72
PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF ARKHIV PATOLOGII
(USSR) V30 N3 P3-12 1968, BY ALBERT L. PEABODY.

DESCRIPTORS: (*ELECTROMAGNETIC FIELDS, *RADIOBIOLOGY),
RADIATION EFFECTS, RADIATION DOSAGE, BLOOD CIRCULATION,
LYMPH, LUNG, HISTOLOGY, PATHOLOGY, TISSUES(BIOLOGY),
CELLS(BIOLOGY), CAPILLARIES, SEX GLANDS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE AUTHOR PRESENTS A LITERATURE SURVEY ON THE
BIOLOGICAL ACTION OF MAGNETIC FIELDS AND THE RESULTS
OF EXPERIMENTAL-MORPHOLOGICAL INVESTIGATIONS, CARRIED
OUT AT HIS LABORATORY. AS DEMONSTRATED, DIRECT
MAGNETIC FIELD, 7,000 OERSTED IN INTENSITY, AND AN
INDIRECT ON (50 CYCLES PER SEC.), 200 OERSTED IN
INTENSITY POSSESSED A MARKED BIOLOGICAL EFFECT. IN
THE MENTIONED PHYSICAL CONDITIONS AND AN EQUAL
EXPOSURE (6 1/2 HOURS) THE INDIRECT FIELD PROVED
TO BE MORE ACTIVE. DIRECT AND INDIRECT MAGNETIC
FIELDS PROVED TO INDUCE DISTURBANCE OF HEMODYNAMICS
AND LYMPH CIRCULATION. HISTOLOGICAL INVESTIGATIONS
DEMONSTRATED A PASSENGER DILATATION OF CAPILLARIES,
EDEMA OF THE LUNGS AND OF THE TESTICLES. DYNAMIC
INVESTIGATIONS POINTED TO NORMALIZATION OF
MORPHOLOGICAL PICTURE 30 DAYS AFTER THE FIELD ACTION.
THE MAGNETIC FIELDS (DIRECT AND INDIRECT)
FAILED TO DEPRESS THE REGENERATION. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 744 594 6/18
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

SPECIAL BIOPHYSICAL PROBLEMS IN AEROSPACE
MEDICINE. PART III.

(U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS NO. 95,
MAR 72 126P PFISTER, A. M. ;
REPT. NO. AGARD-CP-95-PT-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AEROSPACE MEDICAL
PANEL SPECIALIST MEETING HELD IN LUCHON
(FRANCE) 30 SEP-1 OCT 71. SEE ALSO AD-742 497.
NATO FURNISHED. TEXT OF SOME CHAPTERS IN FRENCH.

DESCRIPTORS: (*RADIOBIOLOGY, AEROSPACE MEDICINE),
(*AEROSPACE MEDICINE, *HEALTH PHYSICS), (*AVIATION
MEDICINE, HEALTH PHYSICS), BIOPHYSICS, RADIATION DOSAGE,
RADIATION EFFECTS, ELECTROMAGNETIC RADIATION, LASERS,
COSMIC RAYS, SYMPOSIA, FRANCE

(U)

THE MORE IMPORTANT ASPECTS OF PHYSIOLOGICAL AND
CLINICAL PROBLEMS IN AVIATION MEDICINE ARE
GENERALLY WELL KNOWN AT THIS TIME. IT IS NOT THE
SAME FOR BIOPHYSICAL PROBLEMS WHICH CONFRONT MAN WITH
VERY NEW ENVIRONMENTAL FACTORS SUCH AS SPACE COSMIC
RAYS, ELECTROMAGNETIC AND MAGNETIC FIELDS, LASERS
ETC. THE BIOLOGICAL EFFECTS OF THESE FACTORS ARE
OFTEN INSUFFICIENTLY KNOWN. THIS FIRST MEETING
STATES THESE PROBLEMS, REVIEWS THE FINDINGS OF
RESEARCH ALREADY CARRIED OUT, AND POINTS OUT THE MAIN
TOPICS TO BE CLARIFIED AS SOON AS POSSIBLE. IT IS
DIVIDED INTO FOUR PARTS: BIOLOGICAL EFFECTS OF
COSMIC RAYS; BIOLOGICAL EFFECTS OF ELECTROMAGNETIC
WAVES; BIOLOGICAL EFFECTS OF MAGNETIC FIELDS;
BIOLOGICAL EFFECTS OF LASERS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 745 775 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1970-30 JUNE
1971.

(U)

JUN 71 67P
REPT. NO. AFKRI-ARR-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-704 167.

DESCRIPTORS: (*RADIOBIOLOGY, SCIENTIFIC RESEARCH),
REVIEWS, RADIATION DOSAGE, GASTROINTESTINAL SYSTEM,
IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY,
PHARMACOLOGY, CYTOLOGY, BONE MARROW, PHYSIOLOGY,
BEHAVIOR, MAMMALS, MORTALITY RATES, RADIATION INJURIES,
RADIATION EFFECTS, RADIATION DOSAGE (U)

THE REPORT CONTAINS A SUMMARY OF THE RESEARCH
PROJECTS OF THE ARMED FORCES RADIOBIOLOGY
RESEARCH INSTITUTE FOR THE PERIOD 1 JULY 1970
TO 30 JUNE 1971. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 747 539 9/2 6/18 6/5
CALIFORNIA UNIV LOS ANGELES CALIF DEPT OF COMPUTER
SCIENCE

PATTERN RECOGNITION, SIMULATION, AND
DECISION-MAKING,

(U)

AUG 72 31P KLINGER, ALLEN ; RYNELL, INGA ;
CONTRACT: AF-AFOSR-1915-70
PROJ: AF-9769
MONITOR: AFOSR TR-72-1568

UNCLASSIFIED REPORT

DESCRIPTORS: (*PATTERN RECOGNITION, RADIOBIOLOGY),
STATISTICAL ANALYSIS, DECISION THEORY, RADIOGRAPHY,
MATHEMATICAL MODELS, SIMULATION, DIAGNOSIS(MEDICINE),
RADIOACTIVE ISOTOPES (U)
IDENTIFIERS: STATISTICAL DECISION THEORY, COMPUTERIZED
SIMULATION (U)

SIMULATION TECHNIQUES ARE APPLIED TO A BIOMEDICAL
PATTERN RECOGNITION APPLICATION: RADIOISOTOPE
SCANNING. RESULTS OF A SIMULATION EXPERIMENT ARE
PRESENTED FOR AN IDEALIZED MODEL OF THIS APPLICATION.
A DESCRIPTION OF SIMULATION AS A PROCESS IS GIVEN
ALONG WITH AN ABSTRACT FRAMEWORK WHICH IDENTIFIES ITS
KEY CONSTITUENT ELEMENTS. ONE OF THESE, THE
EVALUATION CRITERION, IS DISCUSSED AND ITS IMPORTANT
ROLE IN PRACTICAL SIMULATION EXPERIMENTS IS
DELINEATED. AN EXAMPLE OF THIS CRITERION IS GIVEN
FOR THE RADIOISOTOPE SCANNING APPLICATION, AND ITS
RELATIONSHIP TO THE THEORY OF STOPPING RULES IS
MENTIONED. A PRELIMINARY EVALUATION OF THE
EFFECTIVENESS OF SIMULATION FOR EXPLORING THE PATTERN
RECOGNITION/IMAGE ENHANCEMENT CONCEPTS CONCLUDES THE
PAPER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 749 763 6/18

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE DISTRIBUTION OF DOSE IN TIME DURING
RADIATION THERAPY OF MALIGNANT TUMORS,

(U)

MAY 72 27P BALMUKHANOV, S. B. ;
ZHOLKIVER, K. I. ;
REPT. NO. FTD-MT-24-1571-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF
MEDITSINSKAYA RADIOLOGIYA (USSR) V13 N2 P3-14 1968, BY
CHARLES T. OSTERTAG, JR.

DESCRIPTORS: (*RADIOTHERAPY, *RADIATION DOSAGE), CANCER,
NEOPLASMS, X RAYS, RADIATION INJURIES, TISSUES (BIOLOGY),
DOSE RATE, DOSIMETERS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

IN 1920 SEITZ AND WINTZ PROPOSED THE METHOD OF
THE SINGLE MASSIVE IRRADIATION OF MALIGNANT TUMORS,
HOWEVER THEY SOON REJECTED IT BECAUSE X-RAY THERAPY
COULD NOT ENSURE THE NECESSARY DEGREE OF
STERILIZATION OF THE TUMOR. FURTHERMORE SERIOUS
DAMAGES TO NORMAL TISSUES APPEARED SIMULTANEOUSLY.
THE MAGNITUDE OF CARCINOCIDAL DOSE IS DETERMINED TO
A CONSIDERABLE DEGREE BY THE REGULARITIES IN THE
RELATIONSHIP OF RADIOSENSITIVITY OF VARIOUS TISSUES
WHICH WERE REVEALED ALREADY IN 1905 BY BERGONIE AND
TRIBONDEAU. ANCEL AND VINTEMBERGER ESTABLISHED
THAT THE MANIFESTATION OF RADIATION INJURY DEPENDS ON
THE RATE OF MULTIPLICATION OF CELLS WHICH IS
CHARACTERISTIC FOR ONE OR ANOTHER TISSUE. THESE
INVESTIGATIONS SERVED AS THE PREMISE FOR VARIOUS
SYSTEMS FOR THE DISTRIBUTION OF DOSE IN TIME.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 750 271 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT. NO. 2
(REVISED),
APR 72 106P GLASER, ZORACH R. ;
PROJ: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED 4 OCT 71,
AD-734-391.

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, RADIATION
EFFECTS), (*RADIOBIOLOGY, *BIBLIOGRAPHIES), MICROWAVES,
RADIO WAVES, RADIATION HAZARDS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, ELECTROMAGNETIC
RADIATION HAZARDS (U)

MORE THAN 2300 REFERENCES ON THE BIOLOGICAL
RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION,
PUBLISHED UP TO APRIL 1972, ARE INCLUDED IN THIS
BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR
ATTENTION HAS BEEN PAID TO THE EFFECTS ON MAN ON NON-
IONIZING RADIATION AT THESE FREQUENCIES. THE
CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR, AND
CONTAIN AS MUCH INFORMATION AS POSSIBLE SO AS TO
ASSURE EFFECTIVE RETRIEVAL OF THE ORIGINAL DOCUMENTS.
SOVIET AND EAST EUROPEAN LITERATURE IS INCLUDED
IN DETAIL. AN OUTLINE OF THE EFFECTS WHICH HAVE
BEEN ATTRIBUTED TO RADIO FREQUENCY AND MICROWAVE
RADIATION IS INCLUDED AS CHAPTER 1. THE REVISED
REPORT (WHICH SUPERSEDES DDC REPORT AD-734
391) IS UPDATED WITH THE INCLUSION OF THREE
SUPPLEMENTARY LISTINGS, AND HAS INCORPORATED MANY
CORRECTIONS AND ADDITIONS TO THE ORIGINAL 2100
CITATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 750 448 6/13

NAVAL MEDICAL RESEARCH INST BETHESDA MD

METABOLISM OF 'RICKETTSIA TYPHI' AND RICKETTSIA
AKARI' IN IRRADIATED L CELLS.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT. NO. 30,
MAR 72 10P WEISS, EMILIO ; NEWMAN,
LAWRENCE ; GRAYS, RICHARD ; GRENN, ANN ;
PROJ: MR041.05.01

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN INFECTION AND IMMUNITY, V6
N1 P50-57 JUL 72.

DESCRIPTORS: (*RICKETTSIA TYPHI, METABOLISM),
(*RICKETTSIA AKARI, METABOLISM), GROWTH(PHYSIOLOGY),
TISSUE CULTURE CELLS, RADIOBIOLOGY, DEOXYRIBONUCLEIC
ACIDS, BIOSYNTHESIS, PROTEINS, NUCLEIC ACIDS,
THYMIDINES

(U)

IDENTIFIERS: CYCLOHEXIMIDE

(U)

L CELLS THAT HAD BEEN EXPOSED TO 3,000 R OF 60CO
THE PREVIOUS DAY WERE USED TO STUDY THE GROWTH AND
METABOLISM OF RICKETTSIA TYPHI AND R. AKARI.
VIALE (UNIRRADIATED) L CELLS WERE USED TO
STUDY THE EFFECT OF RICKETTSIAL INFECTION OF HOST-
CELL METABOLISM. AT VARIOUS INTERVALS,
CYCLOHEXIMIDE WAS ADDED TO ONE SET OF CULTURES, TO
INHIBIT EUKARYOTIC PROTEIN AND DEOXYRIBONUCLEIC ACID
(DNA) METABOLISM; PHOSPHATE-BUFFERED SALINE (PBS)
WAS ADDED TO ANOTHER SET. INFECTIVITY OF R.
TYPHI INCREASED TO A PEAK OF 150 TO 400 HEMOLYTIC
UNITS/CULTURE ON DAY 4. CYCLOHEXIMIDE-RESISTANT
ACTIVITY WAS HIGHER IN THE INFECTED CULTURES, WITH A
PEAK EQUIVALENT TO ONE-HALF THE TOTAL ACTIVITY AT DAY
4 TO 5. TOTAL AS WELL AS CYCLOHEXIMIDE-RESISTANT
ADENINE INCORPORATION WAS HIGHER IN THE INFECTED
CELLS BETWEEN DAYS 3 AND 5 AFTER INFECTION, WITH A
PEAK AT DAY 3 TO 4. SOMEWHAT SIMILAR RESULTS WERE
OBTAINED WITH R. AKARI, EXCEPT THAT THE CYCLE OF
INFECTION AND OF CYCLOHEXIMIDE-RESISTANT ACTIVITY
PROCEEDED AND WAS COMPLETED MORE RAPIDLY. WITH
LABELED THYMIDINE, IT WAS SHOWN THAT R. TYPHI AND
R. AKARI DIFFER CONSIDERABLY IN THEIR EFFECTS ON
THE HOST CELL. R. TYPHI ELICITED MODERATE
INHIBITION, WHEREAS R. AKARI INFECTION LED TO A
COMPLETE INHIBITION OF THYMIDINE. IT IS CONCLUDED
THAT RICKETTSIAE HAVE THE NECESSARY ENZYMES FOR
PROTEIN AND NUCLEIC ACID SYNTHESIS, BUT, THUS FAR,
THESE ENZYMES HAVE BEEN ACTIVATED OR INDUCED ONLY IN
AN INTRACELLULAR ENVIRONMENT. (AUTHOR)

(U)

UNCLASSIFIED

ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 751 504 6/18
DIKEWOOD CORP ALBUQUERQUE N MEX

BIOMETRICAL ANALYSIS OF BIOMEDICAL RESPONSE
DATA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 16 JAN 69-13 APR 70,
OCT 72 45P WALL, FRANCIS ;
CONTRACT: F29601-69-C-0043
PROJ: AF-5710
MONITOR: AFWL TR-70-28

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION DOSAGE, LETHAL DOSAGE),
(*DOSIMETERS, RADIATION DOSAGE), AGING(PHYSIOLOGY),
MAMMALS, DOSE RATE, RADIATION TOLERANCE, BIOMETRY (U)

THE PRINCIPAL RESEARCH CENTERED ON AN EFFORT TO
RELATE MEAN LETHAL RADIATION DOSE FOR SHEEP TO THE
AGE OF THE SUBJECT AT THE TIME OF RADIATION. ANIMAL
OF DIFFERENT AGES WERE IMMEDIATELY AVAILABLE AND IT
SEEMED THAT STATISTICAL CONSULTATION WOULD BE
BENEFICIAL IN SEVERAL PROBLEM AREAS ASSOCIATED WITH
SUCH AN EXPERIMENT. SPECIFICALLY, EFFORTS
CONCENTRATED ON THE EXPERIMENTAL DESIGN AND
ANALYTICAL PROCEDURES, RATHER THAN THE ANALYSIS AND
DATA INTERPRETATION WHICH CHRONOLOGICALLY WOULD COME
AFTER THE EXPIRATION DATE OF THIS CONTRACT.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 752 699 6/18

NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION SERVICES DIV

EFFECT OF LASER BEAMS ON BIOLOGICAL OBJECTS
(VOZDEISTVIE LUCHEI KVANTOVOGO GENERATORA
(LAZERA) NA BIOLOGICHESKIE OBJEKTY),

(U)

NOV 72 20P

PIRUZYAN, L. A. IZMENTEV,

V. P. BARSLGIAN, L. KH. SAVCHENKO, G. S. ;

ROGOVIN, V. V. ;

REPT. NO. NISC-TRANS-3367

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PAPER PRESENTED AT ASMA
(42ND), HOUSTON, TX., 27 APR 71.

DESCRIPTORS: (*COHERENT RADIATION, *RADIOBIOLOGY),
(*RADIATION EFFECTS, LASERS), SKIN(ANATOMY),
TISSUES(BIOLOGY), ORGANIC PIGMENTS, BIOPHYSICS, THERMAL
RADIATION, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE PRESENT WORK INVESTIGATES THE EFFECT OF
FOCUSSED AND UNFOCUSSED NEODYMIUM-GLASS LASER BEAMS
OPERATING AT 10,600 A ON PIGMENTED AND NONPIGMENTED
TISSUE IN AN ATTEMPT TO EXPLAIN THE DEGREE OF DAMAGE
TO A BIOLOGICAL STRUCTURE AS A FUNCTION OF ITS
PIGMENTATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 756 771 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PHYSICAL AND RADIOBIOLOGICAL INVESTIGATIONS ON
ARTIFICIAL EARTH SATELLITES, (U)

DEC 72 217P KOVALYOV, E. E. ; KOLOMENSKII,
A. V. ;
REPT. NO. FTD-HC-23-1143-72
PROJ: FTD-T70-02-01B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. FIZICHESKIE I
RADIOBIOLOGICHESKIE ISSLEDOVANIYA NA ISKUSSTVENNYKH
SPUTNIKAKH ZEMLI, MOSCOW, 1971 P1-199.

DESCRIPTORS: (*COSMIC RAYS, *RADIOBIOLOGY), (*SPACE
BIOLOGY, SCIENTIFIC RESEARCH), BIOPHYSICS, RADIATION
DOSAGE, PERMISSIBLE DOSAGE, SPACECRAFT, PROTECTION,
RADIATION HAZARDS, RADIATION EFFECTS, ANIMALS,
PLANTS(BOTANY), BIOCHEMISTRY, USSR (U)
IDENTIFIERS: TRANSLATIONS, *EXO BIOLOGY (U)

THE MONOGRAPH PRESENTS EXPERIMENTAL MATERIALS
OBTAINED ON EARTH ORBITING SPACE SHIPS AND DATA
FROM THE LITERATURE, SUMMARIZING PHYSICAL AND
BIOMEDICAL RESEARCH IN SPACE. RESULTS OF RESEARCH
CONCERNING THE RADIATION ENVIRONMENT IN ORBITS OF
EARTH ORBITING SPACE SHIPS ARE PRESENTED. THE
PRINCIPLES OF CALCULATION OF PERMISSABLE RADIATION
DOSES ARE GIVEN AND PHYSICAL PROTECTION OF SPACE
SHIPS IS DISCUSSED. RADIATION DANGERS ARE
EVALUATED, USING THE PERMISSABLE LEVELS OF COSMIC
RADIATION FOR MAN AND OTHER BIO-OBJECTS. RESULTS
ARE PRESENTED OF EXPERIMENTS INVOLVING THE STUDY OF
COMBINED EFFECT OF RADIATION AND OTHER FACTORS OF
SPACE FLIGHT ON ANIMALS, HIGHER AND LOWER PLANTS,
UNICELLULAR ORGANISMS AND SIMULATED BIOCHEMICAL
SYSTEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 759 049 6/18 6/6
NAVAL ELECTRONIC SYSTEMS COMMAND WASHINGTON D C

SANGUINE SYSTEM BIOLOGICAL/ECOLOGICAL
RESEARCH PROGRAM.

(U)

DESCRIPTIVE NOTE: SUMMARY STATUS REPT. JUL 69-APR 73.
APR 73 80P

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY), (*ECOLOGY, ELECTROMAGNETIC RADIATION),
RADIATION EFFECTS, GENETICS, PHYSIOLOGY, BIOCHEMISTRY,
MICROBIOLOGY (U)
IDENTIFIERS: *RADIATION, ECOSYSTEMS (U)

THE RESEARCH IS DESIGNED TO DETERMINE WHETHER
EXPOSURE TO LOW-LEVEL ELF ELECTROMAGNETIC RADIATION
HAS ANY EFFECT ON BIOLOGICAL/ECOLOGICAL SYSTEMS. A
BRIEF SUMMARY OF EACH STUDY INITIATED BY THE
SANGUINE DIVISION IS GIVEN. TEST RESULTS ARE
GIVEN FOR THOSE THAT HAVE BEEN COMPLETED.
BIOLOGICAL/ECOLOGICAL AREAS CONSIDERED IN THESE
STUDIES INCLUDE GENETICS, FERTILITY, PHYSIOLOGY,
GROWTH AND DEVELOPMENT, BEHAVIOR, BIOLOGICAL RHYTHMS,
SOIL MICROBIOLOGY, BIOCHEMISTRY, PLANT ECOSYSTEMS,
SOIL ORGANISM ECOSYSTEMS, ANIMAL AND BIRD
POPULATIONS, AND BIRD MIGRATION. (AUTHOR MODIFIED
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 762 038 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

BIOLOGICAL EFFECTS IN RODENTS EXPOSED TO
PULSED ELECTROMAGNETIC RADIATION.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,

JUN 73 23P SKIDMORE, W. D. ; BAUM, S.

J. ;

REPT. NO. AFRI-SR73-10

PROJ: DNA-NWED-QAXM

TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY), RODENTS, BIOASSAY, RADIATION EFFECTS,
RADIATION DOSAGE, DOSE RATE, CELLS(BIOLOGY), BLOOD
CELLS, BONE MARROW, BLOOD CHEMISTRY,
REPRODUCTION(PHYSIOLOGY), HISTOLOGY, NEOPLASMS (U)

RODENTS WERE EXPOSED TO ELECTROMAGNETIC PULSE (EMP) RADIATION TO TEST THE HYPOTHESIS THAT RAPID CHANGES IN ELECTRIC AND MAGNETIC FIELDS WOULD INDUCE INJURIES IN BIOLOGICAL SYSTEMS WITH HIGH CELL TURNOVER RATES. IT WAS OBSERVED THAT THE RETICULOCYTE COUNT IN EXPOSED RATS WAS NEARLY ALWAYS GREATER THAN IN APPROXIMATELY 1 HOUR DAILY FOR BIOLOGICAL SAMPLING AND ANIMAL CARE DURING 20 WEEKS. BIOLOGICAL ASSAYS WERE PERIODICALLY CONDUCTED IN EXPOSED AND NONEXPOSED ANIMALS AT APPROPRIATE INTERVALS. IT WAS OBSERVED THAT THE RETICULOCYTE COUNT IN EXPOSED RATS WAS NEARLY ALWAYS GREATER THAN IN NONEXPOSED. HOWEVER, THERE WERE NO CONCOMITANT DIFFERENCES IN PERIPHERAL ERYTHROCYTE COUNTS BETWEEN THE TWO GROUPS. NOR DID RADIOACTIVE IRON INCORPORATION INDICATE INCREASED CELLULAR PRODUCTION IN THE IRRADIATED GROUP. LEVELS OR RELATIVE COUNTS OF CIRCULATING LEUKOCYTES DID NOT DIFFER BETWEEN THE TWO GROUPS. PLATELET COUNTS IN EXPOSED RATS OCCASIONALLY WERE DECREASED BELOW THOSE IN THE NONEXPOSED. BONE MARROW CELLULARITY WAS NOT DIFFERENT BETWEEN THE TWO GROUPS. PRELIMINARY ANALYSIS OF CHROMOSOMES SHOWED NO DETECTABLE INCREASES OF DEFECTS. ROUTINE CHEMICAL ANALYSIS OF BLOOD DEMONSTRATED SIMILAR VALUES IN THE TWO GROUPS. OBSERVATIONS OF FETUSES FROM PREGNANT RATS SHOWED NO ABNORMALITIES.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 762 202 6/1 6/18
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION, FATE AND BIOLOGICAL EFFECTS OF
EXOGENOUS DNA INTO THE CELLS OF IRRADIATED
MAMMALIAN TISSUES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
SEP 72 53P CHARLES, P. ; LEDOUX, L. ;
BALLUET, H. ; WATTERS, C. ; DELAUNOIT, G. ;
CONTRACT: DAJA37-72-C-0488
MONITOR: ARDG(E) E-1294

UNCLASSIFIED REPORT

DESCRIPTORS: (*DEOXYRIBONUCLEIC ACIDS, *CELLS(BIOLOGY)),
(*RADIOBIOLOGY, DEOXYRIBONUCLEIC ACIDS),
TISSUES(BIOLOGY), ABSORPTION(BIOLOGICAL), CHEMICAL
BONDS, BELGIUM (U)
IDENTIFIERS: MOLECULAR BIOLOGY (U)

LABELLED BACTERIAL DNA INFUSED IN RAT CARTOID
BECOMES INTEGRATED IN THE GENOME OF DIFFERENT TARGET
ORGANS AS DOUBLE STRANDED MATERIAL, COVALENTLY BOUND
TO THE NON REPLICATING STRANDS OF THE RECIPIENT
DNA. PART OF THE FOREIGN DNA REPLICATES IN THE
RECIPIENT CELLS. BOTH PROCESSES ARE SUPPRESSED BY
LETHAL X-IRRADIATION. POST IRRADIATION DNA
TREATMENT GREATLY IMPROVES THE ORGAN RESISTANCE TO
X-RAYS, APPARENTLY THROUGH SIDE EFFECTS. DNA
APPEARS TO BIND TO SPECIFIC MEMBRANE RECEPTORS AND TO
PENETRATE INTO LIVING CELLS BY A PROCESS DIFFERING
FROM PINOCYTOSIS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 764 741 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

USAFSAM WHOLE BODY COUNTER SYSTEM
RADIOCHEMICAL DETERMINATION OF THORIUM
DIOXIDE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. AUG-SEP 72,
JUN 73 14P RUPP, TED D. ;
REPT. NO. SAM-TR-73-18
PROJ: AF-7757
TASK: 775701

UNCLASSIFIED REPORT

DESCRIPTORS: (*THORIUM COMPOUNDS, *RADIATION MEASURING
INSTRUMENTS), (*RADIOBIOLOGY, THORIUM COMPOUNDS),
(*ANEMIAS, THORIUM COMPOUNDS), RADIATION CHEMISTRY,
WHOLE BODY IRRADIATION, TISSUES(BIOLOGY), PATHOLOGY (U)

THORIUM CONTENT OF A 72-YEAR-OLD MALE PATIENT
SUFFERING FROM APLASTIC ANEMIA WAS DETERMINED
APPROXIMATELY 25 YEARS AFTER A DIAGNOSTIC PROCEDURE
UTILIZING THOROTRAST. WHOLE BODY THORIUM IN THE
INTACT PATIENT WAS DETERMINED UTILIZING THE USAFSAM
WHOLE BODY COUNTER. POSTMORTEM THORIUM
DETERMINATIONS WERE MADE ON WHOLE ORGANS FROM THE
SAME PATIENT, INCLUDING THE SPLEEN, LIVER, AND
VERTEBRAL BONE. THE THORIUM CONTENT OF THE WHOLE
BODY WAS 574 NC., OR ABOUT 5.27 GM. THE ORGAN
CONTENT WAS: LIVER, 367 NC. OR 3.37 GM.; AND
SPLEEN, 76.1 NC. OR 0.70 GM. BONE AND MARROW
CONTENT COULD NOT BE ACCURATELY DETERMINED WITH THE
METHOD USED UNDER CONSTRAINT OF NONDESTRUCTIVE
ANALYSIS. FROM THESE DATA, THE ORIGINAL INJECTION
WAS CALCULATED TO BE APPROXIMATELY 43 CC. OF
THOROTRAST (5.27 GM. OF THORIUM). (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 766 796 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT, 1 JUL 1971-30 JUN
72.

(U)

JUN 72 97P
REPT. NO. AFRRI-ARR-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 71,
AD-745 775.

DESCRIPTORS: (*RADIOBIOLOGY, SCIENTIFIC RESEARCH),
REVIEWS, RADIATION DOSAGE, GASTROINTESTINAL SYSTEM,
IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY,
PHARMACOLOGY, CYTOLOGY, MORTALITY RATES, RADIATION
INJURIES, RADIATION EFFECTS, RADIATION DOSAGE

(U)

IDENTIFIERS: NUCLEAR MEDICINE

(U)

PROBLEMS IN RADIATION BIOLOGY REMAINED A MAJOR PART
OF THE RESEARCH PROGRAM DURING THIS PERIOD, AND THE
RESULTS OF RESEARCH DONE IN THESE AREAS CONSTITUTE
THE MAJORITY OF THIS REPORT. THE NEW NUCLEAR
MEDICINE AND RADIOPHARMACEUTICAL PROGRAM IS REPORTED,
IN PART, AND OTHER ASPECTS OF THE NEW PROGRAM WILL BE
COVERED IN FUTURE ANNUAL REPORTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 767 387 20/3 6/18
ROCHESTER UNIV N Y SCHOOL OF MEDICINE AND DENTISTRY
EFFECT OF EXTREMELY LOW FREQUENCY ELECTRIC
AND MAGNETIC FIELDS ON ROOTS OF 'VICIA
FABA'. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 73 10P MILLER, MORTON W. ;
CONTRACT: N00014-67-A-0398-0011

UNCLASSIFIED REPORT

DESCRIPTORS: (*PLANTS(BOTANY), *ELECTROMAGNETIC FIELDS),
(*RADIOBIOLOGY, ELECTROMAGNETIC FIELDS), MITOSIS,
GROWTH(PHYSIOLOGY), GENETICS, PHYSIOLOGY (U)
IDENTIFIERS: VICIA FABA (U)

ROOTS OF VICIA FABA WERE EXPOSED TO ELECTRIC AND
MAGNETIC FIELDS COMPARABLE TO THOSE OF PROJECT
SANGUINE. THERE WERE NO DIFFERENCES AMONG
CONTROL AND EXPOSED ROOTS FOR GROWTH OR MITOTIC
INDEX. ALSO, THERE WERE NO CHROMOSOMAL ANOMALIES.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 113 6/18 18/3
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD
AFKRI ELECTROMAGNETIC PULSE (EMP)
SIMULATOR. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
SEP 73 15P BRUNHART, G. ; CARTER, ROBERT
E. ; VALENCIA, V. I. ;
REPT. NO. AFKRI-TN73-14
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC PULSES,
*RADIOBIOLOGY), RADIATION EFFECTS, TRANSMISSION
LINES, ELECTROMAGNETIC FIELDS, ANIMALS, NUCLEAR
EXPLOSIONS (U)

AN ELECTROMAGNETIC PULSE SIMULATOR FOR ANIMAL
STUDIES HAS BEEN BUILT AND OPERATED AT ARMED
FORCES RADIOBIOLOGY RESEARCH INSTITUTE SINCE
SEPTEMBER 1972. THE EXPOSURE VOLUME CONSISTS OF
A TERMINATED PARALLEL-PLATE TRANSMISSION LINE FED
WITH A PULSE THE TIME DEPENDENT WAVE FORM OF WHICH
CAN BE APPROXIMATED BY A DOUBLE EXPONENTIAL. PEAK
ELECTRIC FIELD STRENGTHS UP TO 500 KV/M ARE
AVAILABLE AT A REPETITION RATE UP TO 7 PPS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 131 6/18
STANFORD RESEARCH INST MENLO PARK CALIF LIFE SCIENCES
DIV

RADIOBIOLOGY OF LARGE ANIMALS. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. 1 AUG 72-31 JUL 73,
AUG 73 43P JONES, DAVID C. L. ; KREBS,
JOHN S. ;
CONTRACT: LAHC20-70-C-0219
PROJ: DCPA-2341D

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-752 049.

DESCRIPTORS: *RADIOBIOLOGY, *HEMATOLOGY,
*RADIATION INJURIES, SHEEP, GAMMA RAYS,
RADIATION DOSE, DOSE RATE, BONE MARROW,
ERYTHROCYTES, LEUCOCYTES, KINETICS, LETHALITY (U)

HEMATOLOGIC CHANGES OCCURRING DURING AND AFTER
COMPLEX SEQUENCES OF LOW-DOSE-RATE EXPOSURE OF SHEEP
TO GAMMA RADIATION (COBALT 60) HAVE BEEN
EVALUATED. ERYTHROCYTIC VALUES WERE DEPRESSED EARLY
IN THE IRRADIATION SEQUENCE, WITH FURTHER GRADUAL
DEPRESSION AFTER CESSATION OF EXPOSURE. LEUKOCYTIC
VALUES DECREASED IN A STEPWISE FASHION DURING THE
IRRADIATION SEQUENCE, WITH THE PATTERNS OF DECREASE
AND POST-IRRADIATION RECOVERY DEPENDENT ON THE
PARTICULAR PARAMETERS OF RADIATION EXPOSURE.
STUDIES OF BONE-MARROW CELL KINETICS IN MICE
RECEIVING SINGLE EXPOSURES HAVE SHOWN THAT POST-
IRRADIATION CHANGES IN TOTAL CELLULARITY DEPEND ON
DOSE RATE. FURTHER STUDIES OF LETHALITY IN SHEEP
IRRADIATED AT LOW DOSE RATES HAVE INDICATED THAT A
PREVIOUSLY DEVELOPED MATHEMATICAL MODEL RELATING
EXPOSURE PARAMETERS TO LETHALITY MAY REQUIRE
MODIFICATION WHEN THE EXPOSURE DOSE RATE IS OF THE
ORDER OF 10 R/HR OR HIGHER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 621 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 4.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT.,
JUN 73 24P GLASER, ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-750 271.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY, *BIBLIOGRAPHIES, *RADIATION
EFFECTS, MICROWAVES, RADIO WAVES, RADIATION
HAZARDS

(U)

IDENTIFIERS: *MICROWAVE RADIOBIOLOGY,
ELECTROMAGNETIC RADIATION HAZARDS

(U)

MORE THAN 325 ADDITIONAL REFERENCES ON THE
BIOLOGICAL RESPONSES TO RADIO FREQUENCY AND MICROWAVE
RADIATION, PUBLISHED UP TO MAY 1973, ARE INCLUDED
IN THIS BIBLIOGRAPHY OF THE WORLD LITERATURE.
PARTICULAR ATTENTION HAS BEEN PAID TO THE EFFECTS
OF NON-IONIZING RADIATION ON MAN AT THESE
FREQUENCIES. THE CITATIONS ARE ARRANGED
ALPHABETICALLY BY AUTHOR, AND CONTAIN AS MUCH
INFORMATION AS POSSIBLE SO AS TO ASSURE EFFECTIVE
RETRIEVAL OF THE ORIGINAL DOCUMENTS. SOVIET AND
EAST EUROPEAN LITERATURE IS INCLUDED IN DETAIL.
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 770 926 8/1 6/18 18/8
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

CONTRIBUTIONS FROM THE ALPHA EMITTER,
POLONIUM-210, TO THE NATURAL RADIATION
ENVIRONMENT OF THE MARINE ORGANISMS,

(U)

73 11P FOLSOM, T. R. ; BEASLEY, T.

M. ;

CONTRACT: N00014-69-A-0200-6011

MONITOR: IAEA SM-158/41

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN RADIOACTIVE CONTAMINATION
OF THE MARINE ENVIRONMENT, P625-632 1973.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
WASHINGTON UNIV., SEATTLE.

DESCRIPTORS: *RADIOACTIVE ISOTOPES, *MARINE BIOLOGY,
*ACCUMULATION, RADIOBIOLOGY, ALPHA PARTICLES,
AQUATIC ANIMALS, AQUATIC PLANTS,
CONCENTRATION(CHEMISTRY)

(U)

IDENTIFIERS: POLONIUM 210, BASELINE
MEASUREMENTS

(U)

THERE IS EVIDENCE THAT MANY MARINE ORGANISMS
ACCUMULATE NATURAL ALPHA EMITTERS TO LEVELS THAT
MIGHT BE CONTRIBUTING SUBSTANTIALY TO THEIR BURDEN
FROM IONIZING RADIATION. THERE ARE INCREASING
OPPORTUNITIES FOR ALPHA EMITTERS TO ENTER THE OCEAN
BECAUSE IT HAS BEEN FOUND THAT THIS NATURAL NUCLIDE
ACCUMULATES TO RELATIVELY HIGH LEVELS IN SOME OF THE
SAME MARINE ECOSYSTEMS THAT ACCUMULATE PLUTONIUM
EFFECTIVELY. CONCENTRATIONS OF POLONIUM-210 IN A
VARIETY OF MARINE ORGANISMS ARE COMPARED AND ALSO THE
RADIOACTIVE BURDENS THAT MAY BE INFERRED FROM BULK
TISSUE SAMPLES. SOME DIFFICULTIES OF
INTERPRETATIONS ARE DISCUSSED AND THE NEED FOR MORE
DETAILED MEASUREMENTS IN SPECIFIC ORGANS AND TISSUES.
SOME INFERENCES ABOUT POLONIUM-210 FROM LEAD-210
MEASUREMENTS ALSO ARE PRESENTED. (MODIFIED AUTHOR
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 775 614 22/1 6/18 3/2
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

UNIFIED RANGE SPECTRUM AND LET DISTRIBUTION
FOR HZE PARTICLES OF GALACTIC RADIATION IN
SPACE,

(U)

DEC 73 26P SCHAEFER, HERMANN J. ;
REPT. NO. NAMKL-1198
CONTRACT: NASA ORDER-W-13-280

UNCLASSIFIED REPORT

DESCRIPTORS: *SPACE ENVIRONMENTS, *EXTRATERRESTRIAL
RADIATION, *RADIOBIOLOGY, RADIATION HAZARDS,
RADIATION EFFECTS, RADIATION DOSAGE,
TISSUES(BIOLOGY), SPACE BIOLOGY

(U)

IDENTIFIERS: *GALACTIC RADIATION, LINEAR ENERGY
TRANSFER, GALACTIC COSMIC RAYS

(U)

A UNIFIED RANGE SPECTRUM FOR THE FLUX DENSITIES OF
HZE PARTICLES OF GALACTIC RADIATION IN SPACE IS
PRESENTED FOR ESTABLISHING THE INDIVIDUAL SPECTRUM
FOR ANY Z NUMBER WITH A SIMPLE SCALING PROCEDURE.
DATA ON Z ABUNDANCES ARE PRESENTED AND THE Z
SPECTRUM FROM Z = 2 TO 28 IS DIVIDED INTO FOUR
CLASSES. RANGE SPECTRA FOR THE CLASS
REPRESENTATIVES ARE DERIVED. THE INFLUENCE OF THE
GEOMAGNETIC CUTOFF ON THE RANGE SPECTRA FOR DIFFERENT
LATITUDES IS DISCUSSED. THE DATA ARE SUMMARIZED IN
TWO GRAPHS FROM WHICH EVENT SIZES IN TERMS OF LET
AND RELATED TRACK LENGTHS AND THEIR FREQUENCIES FOR
GIVEN TARGET VOLUMES CAN BE READ DIRECTLY.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 718 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD
ANNUAL RESEARCH REPORT 1 JULY 1972 - 30
JUNE 1973. (U)

JUN 73 127P
REPT. NO. AFRRRI-ARR-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 72,
AD-760 796.

DESCRIPTORS: *RADIOBIOLOGY, SCIENTIFIC RESEARCH,
RADIATION DOSAGE, GASTROINTESTINAL SYSTEM,
IMMUNOLOGY, HEMOPOIETIC SYSTEM, CYTOLOGY,
BIOCHEMISTRY, PHARMACOLOGY, RADIATION EFFECTS,
RADIATION INJURIES (U)

THE REPORT DESCRIBES, IN BRIEF SUMMARY, THE
SCIENTIFIC ACCOMPLISHMENTS OF THE ARMED FORCES
RADIOBIOLOGY RESEARCH INSTITUTE (AFRRRI) FOR
THE PERIOD 1 JULY 1972 TO 30 JUNE 1973. DURING
THIS REPORT PERIOD, THE AFRRRI HAS BROADENED ITS
RESEARCH PROGRAM FROM ONE PRIMARILY LIMITED TO
OPERATIONAL PROBLEMS IN RADIATION BIOLOGY TO ONE
WHICH INCLUDES A NUMBER OF CRITICAL BIOMEDICAL
PROBLEMS OF DIRECT INTEREST TO THE SURGEONS
GENERAL OF THE MILITARY DEPARTMENTS. THE
ESTABLISHMENT OF A NEUROBIOLOGY DEPARTMENT AND
THE EXPANSION OF NUCLEAR MEDICINE ACTIVITIES ARE
REFLECTED IN A SIGNIFICANT NUMBER OF TECHNICAL
SUMMARIES IN THIS REPORT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 780 222 6/18
NAVAL WEAPONS LAB DAHLGREN VA

BIOMEDICAL ASPECTS OF NONIONIZING
RADIATION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 74 98P MILROY, WILLIAM C. ;
REPT. NO. NWL-TR-3110

UNCLASSIFIED REPORT

DESCRIPTORS: *MEETINGS, *RADIOBIOLOGY, RADIATION
EFFECTS, BIOENGINEERING, ELECTROMAGNETIC RADIATION,
MICROWAVES, RADIATION DOSAGE

(U)

IDENTIFIERS: *NONIONIZING RADIATION

(U)

THE REPORT CONSISTS OF THE PROCEEDINGS OF A ONE-DAY
SYMPOSIUM ON BIOMEDICAL ASPECTS OF
NONIONIZING RADIATION HELD ON 10 JULY 1973 AT
THE NAVAL WEAPONS LABORATORY, DAHLGREN,
VIRGINIA IN CONJUNCTION WITH THE OPENING AND
DEDICATION OF THE NEW BIOMEDICAL RESEARCH
LABORATORY. IT INCLUDES A COMPILATION OF SIX
INVITED PAPERS PRESENTED AT THE SYMPOSIUM BY
LEADING AUTHORITIES IN THE FIELDS OF BIO-ENGINEERING,
COMPARATIVE BIOLOGY, HUMAN EXPOSURE FACTORS, HIGH
POWER PULSES, AND EMP BIOEFFECTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 781 333 6/18
ROCHESTER UNIV N Y DEPT OF RADIATION BIOLOGY AND
BIOPHYSICS

EFFECTS OF EXTREMELY LOW FREQUENCY ELECTRIC
AND MAGNETIC FIELDS ON ROOTS OF 'VICIA
FABA'.

(U)

DESCRIPTIVE NOTE: FINAL REPT. SEP 71-JAN 74,
JUN 74 18P MILLER, MORTON W. ;
CONTRACT: N00014-67-A-0398-0011
PROJ: NR-101-881

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 2 OCT 73,
AD-767 387.

DESCRIPTORS: *ELECTROMAGNETIC FIELDS,
*PLANTS(BOTANY), *RADIOBIOLOGY, *RADIATION
EFFECTS, PHYSIOLOGY, GLOBAL COMMUNICATION SYSTEMS,
MITOSIS, GROWTH, GENETICS

(U)

IDENTIFIERS: SANGUINE PROJECT, VICIA FABA

(U)

ROOTS OF VICIA FABA WERE EXPOSED TO ELECTRIC AND
MAGNETIC FIELDS COMPARABLE TO BUT AT LEVELS HIGHER
THAN THOSE ASSOCIATED WITH PROJECT SANGUINE.
THERE WERE NO DIFFERENCES AMONG CONTROL AND EXPOSED
ROOTS FOR GROWTH OR MITOTIC INDEX. ALSO, THERE
WERE NO CHROMOSOMAL ANOMALIES. THREE INDICES ARE
EXAMINED TO DETECT ANY EFFECTS OF EXPOSURE OF GROWING
PRIMARY ROOTS OF VICIA FABA (HORSE BEAN, MUNG
BEAN) TO ELF ELECTRIC AND MAGNETIC FIELDS
SIMULATING THOSE NEAR THE SANGUINE TRANSMITTER:
GROWTH RATE, MITOTIC INDEX, CHROMOSOMAL ABNORMALITIES
IN DIVIDING MERISTEMATIC CELLS. THE CHOICE OF
VICIA FABA AND OF THE ABOVE INDICES WAS DUE TO THE
FACT THAT THEY HAVE BEEN HIGHLY SENSITIVE INDICATORS
OF OTHER FORMS OF BIOLOGICAL STRESS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 782 595 6/18
SHERBROOKE UNIV (QUEBEC) DEPT OF PATHOLOGY

PROTECTIVE EFFECT OF AN ELEMENTAL DIET ON
RADIATION ENTEROPATHY IN THE MOUSE, (U)

73 14P HUGON, J. S. ; BOUNOUS, G. ;
MONITOR: DRE REPRINT-3988

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN STRAHLENTHERAPIE, V146 N6
P701-712 1973.

SUPPLEMENTARY NOTE: TEXT IN ENGLISH; ATTACHED SUMMARIES
IN GERMAN AND FRENCH.

DESCRIPTORS: *DIET, *RADIATION EFFECTS,
*RADIOBIOLOGY, GAMMA RAYS, MICE, CANADA,
INTESTINES, WEIGHT, SURVIVAL (GENERAL),
PROTEINS, PROTECTION, IRRADIATION, CANADA (U)

AN ELEMENTAL DIET CONTAINING 9.5% PROTEIN
HYDROLYSATE INSTEAD OF WHOLE PROTEINS HAS BEEN SHOWN
TO IMPROVE THE 30 DAYS SURVIVAL IN MICE FOLLOWING 900
RD OF GAMMA RAYS. SURVIVAL RATE AND BODY-WEIGHT OF
DIFFERENT GROUPS OF ANIMALS RECEIVING DIETS WITH
9.5% OR 15% PROTEIN HYDROLYSATE OR WHOLE PROTEINS,
GIVEN BEFORE AND AFTER IRRADIATION ONLY AFTER
IRRADIATION, HAVE BEEN COMPARED. INTESTINAL MITOTIC
INDICES IN MICE EATING THE SAME DIETS HAVE ALSO BEEN
MEASURED FOLLOWING 1000 R OF GAMMA RAYS. THE
RESULTS SHOW THAT AN ELEMENTAL DIET CONTAINING 9.5%
PROTEIN HYDROLYSATE APPEARS TO PROVIDE THE BEST
SURVIVAL RATE, WEIGHT RECOVERY AND INTESTINAL MITOTIC
INDEX ON CONDITION THAT THE DIET IS GIVEN BEFORE
IRRADIATION. SOME OF THE REASONS EXPLAINING THIS
POSITIVE EFFECT OF THE ELEMENTAL DIET ARE DISCUSSED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 783 772 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

AIRCREW VULNERABILITY IN NUCLEAR
ENCOUNTERS.

(U)

DESCRIPTIVE NOTE: AEROMEDICAL REVIEW,
JUL 74 23P ALBANESE, RICHARD A. ;
PICKERING, JOHN E. ;
REPT. NO. SAM-TR-74-18, SAM-REVIEW-5-74
PROJ: AF-7757
TASK: 775705

UNCLASSIFIED REPORT

DESCRIPTORS: *NUCLEAR RADIATION, *RADIOBIOLOGY,
*RADIATION EFFECTS, *HEALTH PHYSICS, FLIGHT CREWS,
DOSAGE, LETHALITY, NUCLEAR WARFARE, DOSE RATE,
NUCLEAR WEAPONS, AEROSPACE MEDICINE

(U)

A COMPUTATIONAL METHOD (ALGORITHM) IS DESCRIBED
WHICH ESTIMATES PROBABLE MISSION OUTCOME RESULTING
FROM CREW EXPOSURE TO PROMPT NEUTRON GAMMA RADIATION
AND/OR RESIDUAL FALLOUT RADIATION. THE THREAT
SCENARIO PRESUPPOSES THAT: THE CREW HAS ENCOUNTERED
ONE OR MORE NUCLEAR WEAPONS; BOTH AIRCRAFT AND CREW
HAVE SURVIVED THE BLAST AND THERMAL INSULTS; AND THE
AIRCRAFT IS UNDEGRADED BY THE RADIATION (AIRCRAFT
IS SURVIVABLE). THUS ONE IS EXAMINING DECREASES
IN MISSION PERFORMANCE BASED UPON CREW IRRADIATION
ONLY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 783 992 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

REPORT ON THE INTERNATIONAL SEMINAR ON
RADIATION PROTECTION, ENVIRONMENT AND
POPULATION (1ST) HELD IN POTSDAM ON 16-21
OCT 72, (U)

JUL 74 12P ETTENHUBER, E. ; CLAJUS, P. ;
REPT. NO. FTD-HC-23-2303-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF ISOTOPENPRAXIS
(EAST GERMANY) V9 N5 P189-191 MAY 73.

DESCRIPTORS: *MEETINGS, *RADIOBIOLOGY, *HEALTH
PHYSICS, ENVIRONMENTS, RADIATION, POPULATION,
RADIATION DOSAGE, EAST GERMANY, TRANSLATIONS (U)
IDENTIFIERS: RADIOECOLOGY (U)

THE BASIC PRINCIPLES OF RADIATION PROTECTION AND
RADIOHYGIENIC TESTING OF THE ENVIRONMENT WERE THE
CENTRAL THEME OF THE FIRST DAY OF THE SEMINAR. ON
THE SECOND DAY OF THE SEMINAR, A TOTAL OF 11 LECTURES
AND MANY DISCUSSIONS ENLARGED ON THE BIOLOGICAL
FUNDAMENTALS OF RADIATION PROTECTION. THE THIRD DAY
OF THE SEMINAR WAS RESERVED FOR THE RADIATION
PROTECTION PROBLEMS DUE TO GLOBAL FALLOUT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 784 007 6/18
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA
MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 5.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT.,
JUL 74 40P GLASER, ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-770 621.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY, *BIBLIOGRAPHIES, *RADIATION
EFFECTS, MEDICAL RESEARCH, MICROWAVES, RADIO
WAVES, RADIATION HAZARDS

(U)

IDENTIFIERS: *MICROWAVE RADIOBIOLOGY,
ELECTROMAGNETIC RADIATION HAZARDS

(U)

ALMOST 500 ADDITIONAL REFERENCES ON THE BIOLOGICAL
RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION,
PUBLISHED UP TO JULY 1974, ARE INCLUDED IN THIS
BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR
ATTENTION HAS BEEN PAID TO THE EFFECTS OF NON-
IONIZING RADIATION ON MAN AT THESE FREQUENCIES.
THE CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR
(WHERE POSSIBLE), AND CONTAIN AS MUCH INFORMATION
AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF
THE ORIGINAL DOCUMENTS. SOVIET AND EAST
EUROPEAN LITERATURE IS INCLUDED IN DETAIL.
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 785 609 6/18 20/5
JOINT AMRDC-AMC LASER SAFETY TEAM PHILADELPHIA PA

OCULAR AND SKIN HAZARDS FROM CO2 LASER
RADIATION,

(U)

72 16P BROWNELL, ARNOLD S. ; STUCK,
BRUCE E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *CARBON DIOXIDE LASERS, *RADIATION
EFFECTS, *LASER HAZARDS, *HEALTH PHYSICS,
RADIOBIOLOGY, GAS LASERS, MATHEMATICAL MODELS,
CORNEA, SKIN(ANATOMY), EYE, RADIATION
DOSAGE, THRESHOLD EFFECTS, RESPONSE(BIOLOGY),
LABORATORY ANIMALS, DAMAGE, EXPERIMENTAL DATA

(U)

THE PURPOSE OF THE PAPER IS THREEFOLD: FIRST,
TO PROVIDE DATA NECESSARY FOR MILITARY AND CIVILIAN
SAFETY COMMUNITIES BY PRESENTING EXPERIMENTALLY
DETERMINED THRESHOLD DOSES, FROM TWO INDEPENDENT
STUDIES, FOR THE MINIMAL DETECTABLE CHANGES IN CORNEA
AND SKIN FOLLOWING EXPOSURE TO CO2 LASER RADIATION.
SECOND, TO TEST THE VALIDITY OF A MATHEMATICAL
MODEL IN PREDICTING DAMAGE THRESHOLDS. THIRD, TO
DETERMINE THE EXTENT THIS MODEL ACCOUNTS FOR
DIFFERENCES IN THE EXPERIMENTALLY DETERMINED DOSE-
RESPONSE RELATIONSHIPS FOR THE TWO TISSUES STUDIED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 786 753 6/18
BATTELLE PACIFIC NORTHWEST LABS RICHLAND WASH BIOLOGY
DEPT

EFFECTS OF EXPOSURE TO PULSED MICROWAVES
(RADAR) ON CENTRAL NERVOUS SYSTEM
EXCITABILITY IN LABORATORY ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 74 69P HUNT, EDWARD L. ; PHILLIPS,
RICHARD D. ; KING, NANCY W. ;
CONTRACT: N00014-70-C-0197
PROJ: NR-101-809

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *CENTRAL NERVOUS SYSTEM, *RADIOBIOLOGY,
*RADIATION EFFECTS, *MICROWAVES, LABORATORY
ANIMALS, RADAR PULSES, RADIATION DOSAGE,
EXPERIMENTAL DATA, EXPOSURE (PHYSIOLOGY),
DOSIMETRY, RATS, MICE, FACILITIES (U)
IDENTIFIERS: RECOMMENDATIONS, *MICROWAVE
RADIOBIOLOGY (U)

A MICROWAVE BIOEFFECTS PROJECT WAS DESIGNED TO
DEVELOP RELIABLE EXPOSURE METHODS AND DOSE ESTIMATION
PROCEDURES FOR USE WITH LABORATORY ANIMALS TO
INVESTIGATE POTENTIAL EFFECTS ON CENTRAL NERVOUS
SYSTEM (CNS) EXCITABILITY. A RESONATING CAVITY
EXPOSURE SYSTEM, POWERED BY A COMMERCIAL 2.45 GHZ
PULSED MAGNETRON, WAS DEVELOPED AND PROVIDED ACCURATE
CONTROL OF THE INTEGRAL ENERGY DELIVERED
MULTILATERALLY TO THE ANIMAL. A HIGH PERFORMANCE
ANECHOIC CHAMBER FACILITY, POWERED BY A 2.88 GHZ
RADAR TRANSMITTER, PULSED WITH HIGH PEAK POWER,
PROVIDED PLANE WAVE IRRADIATION. A BIODOSIMETRY
METHOD, BASED ON LATENCY FOR MICROWAVE-INDUCED
SEIZURE, WAS DEVELOPED FOR USE IN BOTH SYSTEMS FOR
INDEXING EXPOSURE LEVELS, FOR VALIDATING BIOPHYSICAL
DOSIMETRY MEASUREMENTS AND FOR INVESTIGATING EFFECTS
OF FIELD GEOMETRY. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 20M07

AD- 786 807 6/8 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

PROCEEDINGS OF THE SCIENTIFIC-TECHNICAL
CONFERENCE ON THE USE OF IONIZING RADIATION
IN THE NATIONAL ECONOMY. ISSUE 3.

(U)

JAN 74 412P
REPT. NO. FSTC-HT-23-1512-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF DOKLADY NAUCHNO-
TEKHNICHESKOI KONFERENTSII PO ISPOLZOVANIYU
IONIZIRUYUSHCHIKH IZLUCHENII V NARODNOM KHOZYAISTVE.
ISSUE 3, TULA, 1970 P2-313.

DESCRIPTORS: *MEETINGS, *IRRADIATED FOOD,
*RADIATION EFFECTS, *RADIOBIOLOGY, FRUITS, BEEF,
ECONOMICS, UNITED STATES, GAMMA RAYS,
TREATMENT, TRANSLATIONS, USSR, NOISE REDUCTION,
HEAT, RESISTANCE, IONIZING RADIATION, PORK,
FISHES

(U)

RADIATION CHEMISTRY AND TECHNOLOGY OF FOOD
PRODUCTS, THE HYGIENIC EVALUATION OF IRRADIATED FOOD
PRODUCTS, AND THE GAMMA FACILITIES OF THE FOOD
INDUSTRY ARE THE THREE MAIN DIVISIONS OF THIS BOOK.
THE EFFECT OF IONIZING RADIATION ON FRUIT TISSUE
DISORDERS, FRUIT MATURATION RATE, MICROFLORA COUNT IN
FRUITS AND VEGETABLES, CRYOCONCENTRATION OF FRUIT
JUICES, AND BEEF AND PORK STORAGE LIFE IS REPORTED IN
THE FIRST PART OF THE BOOK, ALONG WITH RELATED
APPLICATIONS. PART II DEALS WITH THE HYGIENIC
MONITORING OF IRRADIATED FRUITS, FISH, AND THE DAILY
DIETS OF POPULATION GROUPS. PART III REPORTS ON
GAMMA FACILITY OPERATION AND ECONOMICS AND THE USE OF
IONIZING RADIATION IN REDUCING NOISE LEVELS IN
SEMICONDUCTOR DEVICES AND ENHANCING THE HEAT
RESISTANCE OF BALL-BEARINGS AND PACKING GREASES, AS
WELL AS INCREASING FRUIT TISSUE PERMEABILITY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 806 313 6/18
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

PRELIMINARY STUDIES ON THE LUMINESCENCE EFFICIENCY OF
BIOLOGICAL COMPOUNDS, (U)

DEC 54 13P KEREIAKES, J. G. ; PARR, W.
H. ; KREBS, A. T. ;
REPT. NO. USAMRL-155
PROJ: AMRL-6-59-08-014

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, LUMINESCENCE), RADIATION
EFFECTS, BIOCHEMISTRY, SOLUTIONS(MIXTURES), AMINO ACIDS,
PEPTIDES, GAMMA RAYS, FLUORESCENCE, VITAMINS,
EMISSIVITY (U)

THE EFFECTS OF SUCH FACTORS AS CONCENTRATION, PH,
ETC. ON THE LUMINESCENCE EFFICIENCY OF BIOLOGICAL
COMPOUNDS IN AQUEOUS SOLUTIONS UNDER HIGH-ENERGY
RADIATION BOMBARDMENT WERE STUDIED. THE RESULTS
INDICATE THAT BIOLOGICAL COMPOUNDS QUENCH THE
DISTILLED-WATER SOLVENT LUMINESCENCE; THAT THERE IS
INCREASED LUMINESCENCE QUENCHING WITH INCREASING
CONCENTRATION; AND THAT TWO OF THE COMPOUNDS STUDIED,
TRYPTOPHANE AND GLUTATHIONE, SHOW A DEPENDENCE OF
LUMINESCENCE ON THE PH OF SOLUTIONS. THESE
RESULTS ARE DISCUSSED BRIEFLY IN TERMS OF THEORETICAL
CONSIDERATIONS OF ENERGY TRANSPORT MECHANISMS IN
IRRADIATED SOLUTIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 824 242 6/18
ROCHESTER UNIV N Y DEPT OF RADIATION BIOLOGY AND
BIOPHYSICS

BIOLOGIC EFFECTS OF MICROWAVE EXPOSURE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1958-1965,
SEP 67 133P MICHAELSON, SOL M. ; THOMSON,
R. A. E. ; HOWLAND, JOE W. ;
REPT. NO. UR-49-810
CONTRACT: AF 30(602)-2921
PROJ: AF-5545
MONITOR: RADC TR-67-461

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION HAZARDS, MICROWAVES),
(*RADIOBIOLOGY, MICROWAVES), THERMAL STRESSES, BONE
MARROW, RESPONSE(BIOLOGY), ANIMALS, SAFETY,
CARDIOVASCULAR SYSTEM, THYROID GLAND, SENSITIVITY,
EXPOSURE(PHYSIOLOGY), RADIATION EFFECTS, CENTRAL NERVOUS
SYSTEM, HEMOPOIETIC SYSTEM, DRUGS (U)

THE EXACT NATURE OF THE BIOLOGICAL EFFECTS OF
MICROWAVES IS NOT COMPLETELY UNDERSTOOD. EVIDENCE
INDICATES THAT MICROWAVE ENERGY CAN ACT AS A
'STRESSOR' AGENT, AND HAS AN EFFECT ON REGULATORY AND
INTEGRATIVE MECHANISMS OF THE BODY WITH RESULTANT
ALTERATION IN HOMEOKINESIS. ANIMALS EXPOSED TO
MICROWAVES AT SPECIFIC FREQUENCIES AND FLUX DENSITIES
EXPERIENCE THERMAL STRESS. DURATION OF EXPOSURE,
ENVIRONMENTAL TEMPERATURE, AND DRUGS THAT AFFECT THE
CENTRAL NERVOUS SYSTEM (CNS) AND TEMPERATURE
REGULATION INFLUENCE THE RESPONSE OF ANIMALS. HIGH
AMBIENT TEMPERATURE EXAGGERATES THE THERMAL RESPONSE,
WHILE EXPOSURE IN A COLD ENVIRONMENT PROLONGS THE
TIME INTERVAL FOR AN INCREASE IN BODY TEMPERATURE.
MICROWAVE EFFECTS ON HEMATOPOIESIS, THYROID
FUNCTION AND INTERACTION WITH IONIZING RADIATION ARE
DISCUSSED. SUFFICIENT DATA ARE NOT AVAILABLE TO
ESTABLISH A COMPREHENSIVE SAFE LEVEL FOR MICROWAVE
EXPOSURE BECAUSE OF MICROWAVE FREQUENCY RELATED
FACTORS WHICH AFFECT BIOLOGIC RESPONSE. IT IS
RECOMMENDED THAT ALL MICROWAVE WORKERS SHOULD UNDERGO
A THOROUGH PRE-EMPLOYMENT AND PERIODIC MEDICAL
EXAMINATION. PERSONS WITH CARDIOVASCULAR PROBLEMS
OR LENTICULAR DEFECTS SHOULD BE CONSIDERED AS RISKS.
BECAUSE OF INDICATION OF BONE MARROW AND THYROID
SENSITIVITY TO MICROWAVES, HEMATOLOGIC AND THYROID
FUNCTION STUDIES SHOULD BE INCORPORATED IN THE
MEDICAL EXAMINATION.

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167
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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 887 119 6/18

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

BIOLOGICAL EFFECTS OF ELECTROMAGNETIC
RADIATION - A BIBLIOGRAPHY.

(U)

DESCRIPTIVE NOTE: PRELIMINARY BIBLIOGRAPHIC REPT.,

JUL 71 259P GROVE, H. MARK ;

CONTRACT: ARPA ORDER-1508

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY), (*BIBLIOGRAPHIES, RADIOBIOLOGY),
RADIATION EFFECTS, MICROWAVES, RADIATION HAZARDS,
RADIATION INJURIES

(U)

IDENTIFIERS: BEER(BIOLOGICAL EFFECTS OF
ELECTROMAGNETIC RADIATION, BIOLOGICAL EFFECTS OF
ELECTROMAGNETIC RADIATION

(U)

THE REPORT DESCRIBES THE LITERATURE PROGRAM ON THE
BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION AND
GIVES BIBLIOGRAPHIC INFORMATION ON APPROXIMATELY 1160
REFERENCES IDENTIFIED TO DATE. IT IS A PRELIMINARY
REPORT CIRCULATED TO ELICIT ADDITIONS TO THE DATA
BANK AND TO ACQUAINT POTENTIAL USERS WITH THE CURRENT
CONTENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 204 6/18 6/8
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

HYGIENIC EVALUATION OF FOOD RATIONS WITH
PREDOMINANCE OF VEGETABLE PRODUCTS SUBJECTED
TO GAMMA-IRRADIATION,

(U)

FEB 73 11P BRONNIKOVA, I. A. ; OKUNEVA,
L. A. ;
REPT. NO. FSTC-HT-23-1206-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF VOPROSY PITANIYA
(USSR) V31 N4 P74-80 1972.

DESCRIPTORS: *RADIATION EFFECTS, *GAMMA RAYS,
*IRRADIATED FOOD, *RADIOBIOLOGY, RATS,
EXPERIMENTAL DATA, FOOD, USSR, TRANSLATIONS,
HYGIENE, STORAGE, VEGETABLES
IDENTIFIERS: EVALUATION

(U)

(U)

THE RESULT PRESENTS THE RESULTS OF THREE-YEAR
INVESTIGATION OF RATIONS INCLUDING ALL ACCEPTABLE
GAMMA-IRRADIATED VEGETABLE PRODUCTS. DETAILED
BIOLOGICAL TESTS WERE CONDUCTED OF THE FEEDING OF AN
EXPERIMENTAL RATION TO FIVE GENERATIONS OF RATS.
ANALYSIS OF THE RESULTS INDICATED THAT FEEDING OF
RATIONS, OF WHICH 82.2% - 83.6% BY CALORIE VALUE
WERE GAMMA-IRRADIATED FOR THE PURPOSE OF INCREASING
STORAGE LIFE. HAD NO ADVERSE EFFECTS ON THE ORGANISM
OF THE ANIMALS. BASED ON ACCEPTED INDEXES
(DOMINATE LETHALS) THERE WAS ALSO NO MUTAGENIC
EFFECT OF THE IRRADIATED VEGETABLE PRODUCTS. BASED
ON THE INVESTIGATIONS CONDUCTED, HYGIENIC
RECOMMENDATIONS WERE GIVEN CONCERNING THE POSSIBILITY
OF EMPLOYING A SERIES OF IRRADIATED PRODUCTS IN THE
DIET.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A000 960 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

THE EFFECTS OF LOCAL SUPRALETHAL
IRRADIATION ON RENAL FUNCTION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
MAY 74 39P BUERKERT, J. E. ; DOYLE, J.
E. ; EWALD, W. G. ;
REPT. NO. AFRRI-SR74-8
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *RADIATION EFFECTS, *KIDNEYS, KIDNEY
FUNCTION TESTS, RADIATION INJURIES, SODIUM,
EXCRETION, RADIOBIOLOGY (U)

CLEARANCE STUDIES WERE PERFORMED IN 16 DOGS WITH
SURGICALLY FORMED HEMIBLADDERS TO EVALUATE THE
INTRINSIC RENAL EFFECTS OF 2000 RADS OF X RAYS
ADMINISTERED AS A SINGLE DOSE TO THE LEFT KIDNEY.
THESE STUDIES WERE CONDUCTED UNDER CONDITIONS OF
WATER DIURESIS IN 10 DOGS ON DAYS 1, 7 AND 14
POSTEXPOSURE. RESULTS OF THE STUDIES INDICATE THAT
THE EARLIEST EFFECTS OF RADIATION ARE RELATED TO THE
ABILITY OF THE PROXIMAL TUBULE TO REABSORB SODIUM AND
ARE MANIFESTED BY BOTH AN INCREASE IN THE FRACTIONAL
AND ABSOLUTE EXCRETION OF SODIUM WITHIN 24 HOURS OF
EXPOSURE, WHICH CONTINUES THROUGHOUT THE INTERVAL OF
THE STUDY, AND BY A MARKED INCREASE IN THE EXCRETION
OF CH₂O WITHIN A DAY OF EXPOSURE, WHICH BECOMES
GREATER WITH TIME. APPROXIMATELY THREE WEEKS
POSTEXPOSURE, BUT BEFORE GLOMERULAR FILTRATION RATE
DECLINES, THE CONCENTRATING SEGMENT OF THE NEPHRON IS
IMPAIRED. THESE STUDIES SUGGEST THAT RENAL TUBULAR
INJURY IS THE MAJOR EARLY EFFECT OF RADIATION.
(MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A001 558 6/18
PENNSYLVANIA UNIV PHILADELPHIA

EFFECTS OF MICROWAVES: LOCAL 'HOT SPOT'
HEATING BY MICROWAVES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JAN 70-31 DEC 73,
OCT 74 10P SCHWAN, HERMAN P. ;
CONTRACT: N00014-67-A-0216-0015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACTS NONR-
551(05) AND NONR-551(52).

DESCRIPTORS: *RADIOBIOLOGY, RADIATION EFFECTS,
MICROWAVES, HEAT, TISSUES(BIOLOGY),
CELLS(BIOLOGY), RADIATION INJURIES
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY

(U)

(U)

THE REPORT SUMMARIZES ACTIVITIES SINCE JANUARY
1970. ACTIVITIES IN THE LABORATORY INCLUDE THE
FOLLOWING TOPICS: HOT SPOT STUDIES; FIELD FORCE
EFFECTS; AND BIOPHYSICAL AND OTHER PRINCIPLES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A004 024 6/18
INSTITUTE FOR BEHAVIORAL RESEARCH INC SILVER SPRING MD

EFFECTS OF MICROWAVE IRRADIATION ON EMBRYONIC
BRAIN TISSUE. (U)

DESCRIPTIVE NOTE: FINAL REPT. 15 OCT 73-14 OCT 74,
NOV 74 11P RIOCH, DAVID MCK. ;

REPT. NO. 151
CONTRACT: DAHC04-74-C-0004
MONITOR: ARO 11739.1-L

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROWAVES, *RADIATION EFFECTS,
*RADIOBIOLOGY, *BRAIN, IRRADIATION, EMBRYOS,
TISSUES(BIOLOGY), RATS, LABORATORY ANIMALS,
EXPERIMENTAL DATA, GROWTH(PHYSIOLOGY),
CIRCADIAN RHYTHMS, RADIATION DOSAGE, DOSE RATE (U)
IDENTIFIERS: MICROWAVE RADIOBIOLOGY (U)

SEVERAL GROUPS OF DATED PREGNANT RATS WERE EXPOSED
STARTING ON THE 13TH DAY OF GESTATION IN THE ANECHOIC
CHAMBERS OR IN A CALIBRATED OVEN. ALL THE
EXPOSURES TO MICROWAVE IRRADIATION WERE CONDUCTED
AFTER 0700 AND BEFORE 1500 HOURS. THE RATS WERE
SACRIFICED ON THE 19TH DAY OF GESTATION, THE FETUSES
WEIGHED AND THEIR BRAINS FIXED AND SERIALY
SECTIONED. NO DIFFERENCES WERE FOUND BETWEEN THE
IRRADIATED FETUSES AND THE CONTROLS WHICH HAD BEEN
SIMILARLY HANDLED BUT NOT IRRADIATED. IN A FINAL
EXPERIMENT RATS WERE EXPOSED TO IRRADIATION FROM 1700
TO 1900 HOURS OR OVERNIGHT (FROM 1800 TO 0800 OR
1000 HOURS) AT 1700 MHZ AND 5 OR 10 MW/SQ CM, ON
THE 6TH TO THE 9TH AND THE 12TH TO THE 16TH DAYS OF
GESTATION. THE EXPOSED FETUSES WERE HEAVIER THAN
THE CONTROLS AND THE BRAINS LARGER. THE DIFFERENCE
WAS APPROXIMATELY 10 PERCENT. THIS FINDING SUGGESTS
THAT THE EFFECT MAY BE DUE TO SOME FACTOR WHICH
VARIES WITH THE CIRCADIAN RHYTHM. IT MAY ALSO HAVE
RESULTED FROM THE EARLIER OR THE REPEATED
IRRADIATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A004 854 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

CEREBRAL TEMPERATURE CHANGES IN THE MONKEY
(MACACA MULATTA) AFTER 2500 RADS IONIZING
RADIATION,

(U)

APR 74 15P MCFARLAND, W. L. ; WILLIS,

J. A. ;

REPT. NO. AFFRI-SR74-7

PROJ: DNA-MWED-QAXM

TASK: A905

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION EFFECTS,
*CEREBRUM, MONKEYS, TEMPERATURE,
RESPONSE(BIOLOGY), IMPLANTATION, IONIZING
RADIATION, PHYSIOLOGICAL EFFECTS, BRAIN

(U)

TO DETERMINE THE TEMPERATURE RESPONSE OF THE BRAIN
TO RADIATION, THERMISTOR TEMPERATURE SENSING PROBES
WERE IMPLANTED INTO THALAMIC AND CORTICAL AREAS OF
EIGHT MONKEYS AND THE ARCH OF THE AORTA. AFTER
SECURING BASE-LINE TEMPERATURE RECORDINGS, THE
MONKEYS WERE EXPOSED TO 2500 RADS WHOLE-BODY PULSED
MIXED GAMMA-NEUTRON RADIATION IN THE AFFRI-TRIGA
REACTOR. TEMPERATURE AT ALL MEASURED SITES
GENERALLY DROPPED BRIEFLY IMMEDIATELY AFTER THE
PULSE, THEN ROSE AND STAYED ELEVATED 1-2C FOR THE
REMAINDER OF THE 3-1/2-HOUR OBSERVATION PERIOD.
THERE DID NOT APPEAR TO BE ANY REGIONAL DIFFERENCES
IN BRAIN TEMPERATURE RESPONSE, AND BRAIN TEMPERATURE
FOLLOWED CORE (AORTIC) TEMPERATURE CHANGES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A004 943 6/18
NAVAL SURFACE WEAPONS CENTER DAHLGREN LAB VA

THE EFFECTS OF HIGH POWER PULSED AND LOW
LEVEL CW MICROWAVE RADIATION ON AN OPERANT
BEHAVIOR IN RATS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 75 24P DIACHENKO, JOSEPH A. ; MILROY,
WILLIAM C. ;
REPT. NO. NSWC/DL-TR-3230

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *MICROWAVES,
*RADIATION EFFECTS, *BEHAVIOR, RATS,
EXPERIMENTAL DATA, LABORATORY ANIMALS,
RESPONSE(BIOLOGY), EXPOSURE(PHYSIOLOGY),
HEAT STRESS(PHYSIOLOGY), PERFORMANCE(HUMAN),
ELECTROMAGNETIC RADIATION (U)

IDENTIFIERS: RECOMMENDATIONS, MICROWAVE
RADIOBIOLOGY (U)

THE TWO EXPERIMENTS REPORTED WERE AIMED AT STUDYING
THE EFFECTS OF PULSED AND LOW-LEVEL CW MICROWAVE
RADIATION ON AN OPERANT BEHAVIOR IN RATS. THE
SUBJECTS WERE TRAINED TO PERFORM A LEVER PRESSING
RESPONSE ON A DRL SCHEDULE (DIFFERENTIAL
REINFORCEMENT OF LOW RATE) AND TESTED
IMMEDIATELY AFTER ONE HOUR DAILY EXPOSURE TO 1, 5,
10, 15 (MILLIWATTS PER SQUARE CM) POWER LEVELS AT
2,450 MHZ WHILE OTHER SUBJECTS WERE EXPOSED TO A
PULSED FIELD OF 125 KILOVOLT PER METER. NO EFFECTS
WERE FOUND AT THE 1, 5, AND 10 (MILLIWATTS PER
SQUARE CM) LEVELS NOR DID THE PULSED FIELD AFFECT
PERFORMANCE. HOWEVER, THE SUBJECTS EXPOSED TO THE
15 (MILLIWATTS PER SQUARE CM), WHILE SHOWING NO
SIGNIFICANT DECIMENT IN PERFORMANCE, DID SHOW
OBVIOUS SIGNS OF HEAT STRESS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A005 898 6/18
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

THE EFFECT OF EXTREMELY LOW FREQUENCY
RADIATION ON HUMAN PERFORMANCE: A
PRELIMINARY STUDY.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT.,
AUG 74 24P GIBSON, RICHARD S.; MORONEY,
WILLIAM F.;
REPT. NO. NAMRL-1195
PROJ: MF51.524
TASK: MF51.524.015

UNCLASSIFIED REPORT

DESCRIPTORS: *HEALTH PHYSICS, *RADIOBIOLOGY,
*RADIATION EFFECTS, MEMORY (PSYCHOLOGY),
PERFORMANCE (HUMAN), EXTREMELY LOW FREQUENCY,
PSYCHOMOTOR FUNCTION, RESPONSE (BIOLOGY),
MAGNETIC FIELDS, TEST METHODS
IDENTIFIERS: RECOMMENDATIONS

(U)
(U)

INTEREST IN THE DEVELOPMENT OF AN EXTREMELY LOW
FREQUENCY (ELF) COMMUNICATIONS SYSTEM FOR NAVAL USE
HAS RESULTED IN A PROGRAM TO DETERMINE THE EFFECTS OF
SUCH FIELDS ON MAN. THIS REPORT REPRESENTS PART OF
PILOT LEVEL EFFORT TO DEVELOP A SET OF TESTS AND
PROCEDURES FOR DETERMINING WHETHER ELF FIELDS HAVE
ANY MEASUREABLE EFFECTS ON HUMAN MEMORY AND
PSYCHOMOTOR FUNCTIONS. NONE OF THE TESTS EXHIBITED
SIGNIFICANT PERFORMANCE DECREMENTS UNDER THE GROSS
ANALYTICAL CONDITIONS. THE WILKINSON ADDING
TASK EXHIBITED SIGNIFICANT PERFORMANCE DECREMENTS
DURING THE SECOND OF TWO TESTING SESSIONS WHILE BEING
EXPOSED TO THE ELF RADIATION. ONE OF THE
RESPONSE ANALYSIS TESTER (RATER) CONDITIONS
EXHIBITED A SIGNIFICANT IMPROVEMENT IN PERFORMANCE.
ONE SUBJECT HAD A SIGNIFICANTLY BAD SESSION IN
WHICH HIS PERFORMANCE DECLINED ON 6 OUT 7 MEASURES;
HOWEVER, THIS PERFORMANCE APPEARED TO BE UNRELATED TO
OTHER PSYCHOLOGICAL OR PHYSIOLOGICAL DATA. IN VIEW
OF THE LARGE NUMBER OF STATISTICAL ANALYSES PERFORMED
ON A LIMITED AMOUNT OF DATA, THE FEW SIGNIFICANT
PERFORMANCE DECREMENTS MUST BE INTERPRETED WITH
EXTREME CAUTION. THEY IDENTIFY TECHNIQUES TO BE
REPLICATED IN FUTURE RESEARCH AND NOTHING MORE.
INDIVIDUAL DIFFERENCES IN TEST PERFORMANCE WERE
LARGE, ANY EFFECTS DUE TO THE EXPOSURE TO ELF
MAGNETIC FIELDS WERE SMALL;

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A008 267 18/6 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

MEANS OF INDIVIDUAL PROTECTION AND CONTROL OF
THE ACTION OF IONIZING RADIATION, (U)

JUN 74 20P REFORMATSKII, I. A. ;
REPT. NO. FSTC-HT-23-0524-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. GORYACHIE I
IZOTOPNYE LABORATORII, MOSCOW, 1971 P227-240.

DESCRIPTORS: *HEALTH PHYSICS, *IONIZING RADIATION,
*RADIATION PROTECTION, *RADIOBIOLOGY, PROTECTIVE
CLOTHING, USSR, TRANSLATIONS, LABORATORIES,
MONITORING, SAFETY, PROTECTIVE MASKS, RADIATION
MONITORS, RADIATION EFFECTS (U)

THE REPORT DESCRIBES METHODS FOR USING INDIVIDUAL
PROTECTION MEANS, AND MONITORING THE EFFECTS OF
IONIZING RADIATION IN HOT LABORATORIES. DANGEROUS
RADIOACTIVE SUBSTANCES CAN AFFECT THE SKIN SURFACE OR
CAN BE ABSORBED INTO THE BODY. SPECIAL PROTECTIVE
CLOTHING, GLOVES, SUITS, FOOTWEAR, HAS BEEN DESIGNED
TO COMBAT THE FIRST AND SPECIAL MASKS HELP TO PREVENT
THE SECOND. MONITORING EQUIPMENT, BOTH PORTABLE
AND FIXED, CAN BE USED TO TEST THE ATMOSPHERE AND
PROVIDE SAFETY FOR PERSONNEL WORKING IN CONDITIONS
WHERE RADIATION COULD OCCUR. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A008 276 6/18
IIT RESEARCH INST CHICAGO ILL

ELF COUPLING TO BIOSPHERES.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAR 75 27P SPIEGEL, R. J. ;
REPT. NO. IITRI-E6249-3
CONTRACT: N00039-73-C-0030

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC FIELDS, *RADIATION
EFFECTS, *HEALTH PHYSICS, *RADIOBIOLOGY, ANIMALS,
MATHEMATICAL MODELS, HUMANS,
EXPOSURE(PHYSIOLOGY), TRANSMISSION LINES,
ELECTRIC POWER, EXTREMELY LOW FREQUENCY
IDENTIFIERS: SANGUINE PROJECT

(U)

(U)

THE INDUCED FIELDS, CURRENTS AND POWER ABSORBED BY
SPHERICAL MODELS OF HUMANS OR ANIMALS WHEN EXPOSED TO
ELF ELECTROMAGNETIC FIELDS ARE CALCULATED IN THIS
REPORT. IT IS SHOWN BY A QUASI-STATIC
APPROXIMATION THAT THE INDUCED FIELD IS COMPRISED OF
TWO COMPONENTS: AN ELECTRIC TERM AND A MAGNETIC
TERM. THE RELATIVE IMPORTANCE OF EACH TERM IS
DISCUSSED. IT IS CONCLUDED THAT CHRONIC BIOLOGICAL
EFFECTS OF AN ACUTE NATURE (SUCH AS BODY HEATING OR
NEURAL ACTIVITY) ARE UNLIKELY TO OCCUR FROM ELF
ELECTROMAGNETIC FIELDS OF LOW INTENSITY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A008 404 6/18
CALIFORNIA UNIV LOS ANGELES LAB OF ENVIRONMENTAL
NEUROBIOLOGY

AN EVALUATION OF POSSIBLE EFFECTS OF 45 HZ,
60 HZ AND 75 HZ ELECTRIC FIELDS ON
NEUROPHYSIOLOGY AND BEHAVIOR OF MONKEYS.
PHASE 1: CONTINUOUS WAVE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 75 301P GAVALAS-MEDICI, R. ;
MAGDALENO, S. R. ;
CONTRACT: N00014-69-A-0200-4037

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTRIC FIELDS, *RADIATION EFFECTS,
*RADIOBIOLOGY, *BEHAVIOR, MONKEY,
ELECTROENCEPHALOGRAPHY, PHYSIOLOGY, NERVOUS
SYSTEM, EXTREMELY LOW FREQUENCY,
RESPONSE(BIOLOGY), THRESHOLDS(PHYSIOLOGY),
EXPERIMENTAL DATA, LABORATORY ANIMALS,
IMPLANTATION, PSYCHOPHYSIOLOGY, ELECTRODES (U)
IDENTIFIERS: ANIMAL BEHAVIOR, SANGUINE PROJECT,
EVALUATION, *NEUROPHYSIOLOGY (U)

FIVE MONKEYS WERE WELL TRAINED ON A SKINNERIAN
SCHEDULE IN WHICH A FIVE SEC INTERVAL BETWEEN
RESPONSES WAS REINFORCED. AFTER A STABLE LEVEL OF
RESPONDING HAD BEEN ACHIEVED, MONKEYS WERE EXPOSED TO
A RANDOM SERIES OF SEVERAL ELECTRIC FIELD
CONFIGURATIONS WITH FREQUENCIES OF 7 HZ, 45 HZ,
60 HZ OR 75 HZ AND WITH VOLTAGE LEVELS OF 1, 10,
56 OR 100 V/M P-P. AT 1 V/M P-P THERE WAS NO
DISCERNIBLE EFFECT ON EITHER BEHAVIOR OR ELECTRICAL
BRAIN WAVES. (THIS IS APPROXIMATELY 5 TIMES THE
VOLTAGE ASSOCIATED WITH PROJECT SANGUINE.)
AT 10 V/M THERE WAS EVIDENCE FOR A FREQUENCY-
SPECIFIC THRESHOLD AT 7 HZ. TIME BETWEEN
RESPONSES (INTERRESPONSE TIMES) WAS SIGNIFICANTLY
SHORTER AND VARIABILITY OF RESPONDING WAS REDUCED.
WHEN VOLTAGE WAS INCREASED TO 56 V/M DIRECTION OF
THE EFFECT WAS THE SAME AS AT 10 V/M AND THE
MAGNITUDE OF THE CHANGE WAS MARKEDLY INCREASED FOR
BOTH 7 HZ AND 75 HZ FIELDS. AT 100 V/M THERE
WAS SOME EVIDENCE FOR A CARRY-OVER EFFECT FROM ONE
DAY TO THE NEXT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A009 327 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1973 -- 30
JUNE 1974.

(U)

JUN 74 154P

REPT. NO. AFRI-ARR-8

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 73,
AD-777 718.

DESCRIPTORS: *RADIOBIOLOGY, *MEDICAL RESEARCH,
SCIENTIFIC RESEARCH, RADIATION DOSAGE, RADIATION
EFFECTS, IMMUNOLOGY, BIOCHEMISTRY, PHARMACOLOGY,
TOXICOLOGY, PATHOLOGY, PHYSIOLOGY, NEOPLASMS

(U)

IDENTIFIERS: RADIOPHARMACEUTICAL AGENTS

(U)

;CONTENTS: PATHOPHYSIOLOGICAL STUDIES OF
POTENTIALLY TOXIC SUBSTANCES; BIOLOGICAL EFFECTS OF
ELECTROMAGNETIC PULSES; SUPPRESSION OF SECONDARY
DISEASE BY IN VITRO EXPOSURE OF MIXTURES OF LYMPHOID
AND STEM CELLS TO PURIFIED ANTILYMPHOCYTE ANTIBODY;
ENDOTOXIN EFFECTS OF MOUSE LIVER ADENYL CYCLASE;
DEVELOPMENT OF CLINICAL APPROACHES FOR THE
TREATMENT OF RADIATION SICKNESS AND GRAFT VERSUS HOST
DISEASE THROUGH MANAGEMENT OF THE INTESTINAL FLORA;
CONTROL OF WHITE CELL POPULATION IN THE
POSTIRRADIATED ANIMAL; GLYCOPROTEINS IN DIABETES;
TECHNETIUM-99M PYROPHOSPHATE--COMPARISON OF
ED50 FOR TETANY AND ACIDOSIS WITH ACUTE LD50.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A010 187 6/18
WISCONSIN UNIV-PARKSIDE KENOSHA DIV OF SCIENCE

EFFECTS OF EXTREMELY LOW FREQUENCY
ELECTROMAGNETIC FIELDS ON GROWTH AND
DIFFERENTIATION OF 'PHYSARUM POLYCEPHALUM'. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 15 SEP 71-30 JUN 74
ON PHASE 1:

APR 75 56P GOODMAN, E. M. ; GREENEBAUM,
BEN ; MARRON, MICHAEL T. ;
CONTRACT: N00014-67-A-0128-0021
PROJ: NR-201-126

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIATION
EFFECTS, *RADIOBIOLOGY, *MOLDS(ORGANISMS),
GROWTH(PHYSIOLOGY), EXTREMELY LOW FREQUENCY,
EXPOSURE(PHYSIOLOGY), FUNGI, MICROORGANISMS,
LIFE CYCLES, MITOSIS, CELL DIVISION (U)
IDENTIFIERS: *PHYSARUM POLYCEPHALUM (U)

MICROPLASMODIA FROM THE SLIME MOLD PHYSARUM
POLYCEPHALUM HAVE BEEN CONTINUOUSLY EXPOSED TO WEAK
ELECTROMAGNETIC FIELDS AT 60 AND 75 HZ. TO DATE,
MICROPLASMODIA HAVE BEEN EXPOSED TO FIELD OF 75 HZ,
2.0 G, 0.7 V/M FOR MORE THAN 700 DAYS. ANOTHER
SET OF CULTURES HAS BEEN EXPOSED TO 60 HZ, 2.0 G,
0.7 V/M FOR MORE THAN 400 DAYS. THE TIME BETWEEN
SUCCESSIVE MITOTIC DIVISIONS IN CULTURES EXPOSED TO
THESE FIELDS VARIED FROM 0.5 TO 2 HOURS LONGER THAN
THEIR RESPECTIVE CONTROLS. THIS DELAY WAS
DISCERNABLE AFTER APPROXIMATELY 90 TO 120 DAYS OF
EXPOSURE TO ELECTROMAGNETIC RADIATION. THE ABILITY
TO COMPLETE BOTH THE SEXUAL (SPORULATION) OR
ASEXUAL (SPHERULATION) LIFE CYCLES WAS NOT
AFFECTED BUT A RETARDATION IN REVERSIBLE PHOTOPASMIC
STREAMING WAS OBSERVED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 044 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

PRIMATE PHYSICAL ACTIVITY FOLLOWING
EXPOSURE TO A SINGLE 2000-RAD PULSED DOSE
OF MIXED GAMMA-NEUTRON RADIATION.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
DEC 74 43P CURRAN, C. R. ; FRANZ, C.

G. ;

REPT. NO. AFRR1-SR74-29

PROJ: DNA-NWED-QAXM

TASK: A904

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY,
*IONIZING RADIATION, MONKEYS, LABORATORY ANIMALS,
EXPERIMENTAL DATA, BEHAVIOR,
PERFORMANCE (HUMAN), PHYSIOLOGICAL EFFECTS,
RADIATION DOSAGE

(U)

IDENTIFIERS: MACACA MULATTA

(U)

TWELVE MALE RHESUS MONKEYS (MACACA MULATTA)
WERE TRAINED TO PERFORM ONE OF THE FOLLOWING TASKS:
DISCRETE TRIAL, CUED AVOIDANCE; SHOCK MOTIVATED
PHYSICAL ACTIVITY; OR A COMBINED CUED AVOIDANCE-
PHYSICAL ACTIVITY TASK. ALL TESTS WERE CONDUCTED
IN A PRIMATE PHYSICAL ACTIVITY WHEEL DEVELOPED AT THE
AFRR1. THE ANIMALS WERE EXPOSED TO A SINGLE
2000-RAD PULSED DOSE OF MIXED NEUTRON-GAMMA
RADIATION. ALL ANIMALS PERFORMING THE PHYSICAL
ACTIVITY TASK EXPERIENCED PERIODS OF EARLY TRANSIENT
INCAPACITATION WITHIN THE FIRST SEVEN MINUTES OF
POSTIRRADIATION TESTING. ONLY ONE OF THE ANIMALS
PERFORMING THE CUED AVOIDANCE TASK EXPERIENCED AN
EARLY TRANSIENT INCAPACITATION. THE ANIMALS
PERFORMING THE COMBINED TASK EXPERIENCED PERIODS OF
EARLY TRANSIENT INCAPACITATION ON THE PHYSICAL
ACTIVITY TASK BUT NOT ON THE CUED AVOIDANCE TASK.
THE RECOVERY PERIOD PERFORMANCE LEVEL OF EACH OF
THE ANIMALS PERFORMING THE PHYSICAL ACTIVITY TASK WAS
ALSO SIGNIFICANTLY LOWER THAN THE PERFORMANCE OF ANY
ANIMAL PERFORMING THE CUED AVOIDANCE TASK.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A011 045 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

POSTIRRADIATION VOMITING.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,

OCT 74 23P MIDDLETON, G. R. ; YOUNG, R.

W. ;

REPT. NO. AFRRI-SR74-23

PROJ: DNA-NWED-QAXM

TASK: A904

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY,
*EMESIS, IONIZING RADIATION, MONKEYS,
EXPERIMENTAL DATA, LABORATORY ANIMALS,
EXPOSURE (PHYSIOLOGY), PHYSIOLOGICAL EFFECTS,
RADIATION DOSAGE, VISUAL PERCEPTION

(U)

ONE HUNDRED AND TWENTY-NINE MALE RHESUS MONKEYS (MACACA MULATTA) EXPOSED TO PROMPT RADIATIONS (NEUTRON/GAMMA = 0.4 AND PULSE WIDTH = 50 MSEC) RANGING FROM 700 TO 5600 RADS (MIDHEAD DOSE) WERE ANALYZED FOR INCIDENCE OF VOMITING. THE ANIMALS WERE FASTED 18 HOURS PREEXPOSURE AND OBSERVED FOR INCIDENCE OF VOMITING FOR TWO HOURS POSTEXPOSURE. FOR DOSES LESS THAN 1000 RADS, THE NUMBER OF ANIMALS THAT VOMITED INCREASED DIRECTLY WITH DOSE. ABOVE 1000 RADS, THE NUMBER OF ANIMALS THAT VOMITED DECREASED WITH INCREASING DOSE. THE TOTAL NUMBER OF VOMITIONS PER DOSE GROUP FOLLOWED A NEARLY IDENTICAL PATTERN TO THE INCIDENCE OF EMESIS. IN ALL DOSE GROUPS MOST OF THE EMETIC EPISODES OCCURRED BETWEEN 20 AND 50 MINUTES POSTIRRADIATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A012 084 6/18
ARMY NUCLEAR AGENCY FORT BLISS TEX

THE CALCULATION OF ABSORBED DOSE AND TISSUE
TRANSMISSION FACTORS.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
NOV 74 19P WARSHAWSKY, A. S. ;
REPT. NO. NUA-TM-1-74

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY,
TISSUES(BIOLOGY), MONKEYS, LABORATORY ANIMALS,
EXPERIMENTAL DATA, RADIATION DOSAGE,
EXPOSURE(PHYSIOLOGY)

(U)

;CONTENTS: INTERACTION BETWEEN RADIATION AND
TISSUE; RADIATION QUANTITIES AND UNITS; RADIATION
QUALITY AND DOSE EQUIVALENT; HISTORY OF DOSE
CALCULATIONS; TISSUE TRANSMISSION FACTORS;
RESULTS AND LIMITATIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 053 6/16 6/18
COLORADO STATE UNIV FORT COLLINS DEPT OF RADIOLOGY AND
RADIATION BIOLOGY

TUMOR MICROVASCULATURE FOLLOWING FRACTIONATED
X IRRADIATION, (U)

MAR 75 5P HILMAS, DUANE E. ; GILLETTE,
EDWARD L. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN RADIOLOGY, V116 N1 P165-169
JUL 75.

SUPPLEMENTARY NOTE: PRESENTED AT THE INTERNATIONAL
CONGRESS OF RADIATION RESEARCH (5TH), 14-20 JUL
74, SEATTLE, WASH.

DESCRIPTORS: *RADIOBIOLOGY, *NEOPLASMS, MICE,
MAMMARY GLANDS, X RAYS, IRRADIATION,
EXPOSURE (PHYSIOLOGY), BLOOD CIRCULATION,
DOSAGE, CHEMOTHERAPEUTIC AGENTS, PHOTOMICROGRAPHY,
REPRINTS (U)

THE MICROVASCULATURE OF C3H/BI MOUSE MAMMARY
CARCINOMAS 8 MM IN AVERAGE DIAMETER WAS EVALUATED
USING MORPHOMETRIC METHODS FOLLOWING SIX CONSECUTIVE
DAILY EXPOSURES OF 500 R OF X RADIATION. TUMOR
VOLUME DID NOT CHANGE SIGNIFICANTLY DURING THE
INTERVALS BETWEEN TREATMENTS. TUMORS BEGAN TO GROW
AGAIN 72 HOURS AFTER THE SIXTH 500-R FRACTION, WITH
MEAN VESSEL LENGTH AND SURFACE AREA REACHING MAXIMUM
VALUES AND VESSEL DIAMETERS AND VOLUMES BECOMING
MINIMAL AT THIS TIME. THESE CHANGES WERE ATTRIBUTED
TO IMPROVED COLLOIDAL-CARBON FILLING OF PREVIOUSLY
EXISTING NONFUNCTIONAL VESSELS. WHEN ANATOMICALLY
DERIVED ESTIMATES OF VASCULAR DIMENSIONS WERE RELATED
TO A METABOLICALLY USEFUL BLOOD SUPPLY, IMPROVED
CAPABILITY FOR EXCHANGE OF ESSENTIAL NUTRIENTS
OCCURRED 72 HOURS AFTER THE SIXTH 500-R FRACTION.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A013 250 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

BIOLOGICAL MEASUREMENTS IN RODENTS EXPOSED
CONTINUOUSLY THROUGHOUT THEIR ADULT LIFE TO
PULSED ELECTROMAGNETIC RADIATION.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 75 22P BAUM, S. J. ; EKSTROM, M.
E. ; SKIDMORE, W. D. ; WYANT, D. E. ; ATKINSON,
J. L. ;
REPT. NO. AFRR1-SR75-11
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIATION
EFFECTS, *RADIOBIOLOGY, EXPOSURE (PHYSIOLOGY),
PHYSIOLOGICAL EFFECTS, BLOOD CHEMISTRY,
CHROMOSOMES, NEOPLASMS, FERTILITY, LIFE
SPAN

(U)

RODENTS WERE EXPOSED CONTINUOUSLY FOR 94 WEEKS OF
THEIR ADULT LIFE TO A TOTAL OF 2.5×10 TO THE 8TH
POWER PULSES FROM THE AFRR1 ELECTROMAGNETIC PULSE
(EMP) SIMULATOR WHICH PROVIDES FIVE PULSES PER
SECOND WITH A PEAK ELECTRIC FIELD INTENSITY OF 447
KV/M, A 5-NSEC RISE TIME AND 550-NSEC 1/E FALL
TIME. THE FOLLOWING BIOLOGICAL PARAMETERS WERE
MEASURED: BLOOD CHEMISTRY, BLOOD AND BONE MARROW
CELLULAR CONCENTRATION, CHROMOSOMAL ABERRATIONS,
ERYTHROCYTE PRODUCTION, EFFECTS ON FERTILITY AND
REPRODUCTIVE CAPABILITY AND APPEARANCE OF TUMORS AND
OTHER LATE EFFECTS. AT NO TIME BEFORE AND
PARTICULARLY AS THE RODENTS APPROACHED THE END OF
THEIR LIFE-SPAN DID ANY OF THE BIOLOGICAL
MEASUREMENTS INDICATE AN EFFECT OF THE EMP
RADIATION. WHILE IT IS EXTREMELY DIFFICULT TO PROVE
THE ABSENCE OF ANY INJURY, IT CAN BE UNEQUIVOCALLY
STATED THAT EMP EXPOSURE PRESENTED NO BIOLOGICAL
HAZARD TO THE RODENTS OF THE PRESENT STUDY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 315 6/18
HOWARD UNIV WASHINGTON D C BIO-ENVIRONMENTAL ENGINEERING
AND SCIENCES RESEARCH LAB

BIOLOGICAL EFFECTS OF NON-IONIZING
RADIATION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 75 56P VARMA, MAN M. ; TRABOULAY,
ERIC A. , JR;
CONTRACT: N00014-73-A-0346-0002
PROJ: NR-200-999

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY,
*ELECTROMAGNETIC RADIATION, MUTATIONS,
EXPOSURE (PHYSIOLOGY), LITERATURE SURVEYS,
DEOXYRIBONUCLEIC ACIDS, TABLES (DATA), TESTES,
MICROWAVES

(U)

IDENTIFIERS: *MICROWAVE RADIOBIOLOGY,
ELECTROMAGNETIC RADIATION HAZARDS,
RECOMMENDATIONS, SPERMATOGENESIS

(U)

THE GOALS OF THE RESEARCH PROJECT WERE TO COMPLETE
A COMPREHENSIVE AND INTENSIFIED RESEARCH TO
CATEGORIZE AND EVALUATE THE MUTAGENIC INJURY CAUSED
BY NONIONIZING RADIATION (MICROWAVES). THE
VARIABLES IN THIS STUDY WERE MICROWAVE FREQUENCY,
POWER DENSITY AND TIME OF EXPOSURE. TESTICULAR
TISSUE WAS EXAMINED HISTOLOGICALLY FOR EVIDENCE OF
DAMAGE, AND MUTAGENICITY AND INFERTILITY WAS
DETERMINED BY THE DOMINANT LETHAL ASSAY.
DEOXYRIBONUCLEIC ACID ISOLATION AND
CHARACTERIZATION WAS UNDERTAKEN.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 329 6/18 9/1
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

SOME CONSIDERATIONS CONCERNING THE USE OF
MAGNETRON GENERATORS IN MICROWAVE BIOLOGICAL
RESEARCH.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
MAY 75 15P RENO, VERNON R. ;
REPT. NO. NAMRL-1216
PROJ: MF51.524
TASK: MF51.524.015

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROWAVE TUBES, *RADIOBIOLOGY,
RADIATION EFFECTS, MICROWAVES, MAGNETRONS,
TRAVELING WAVE TUBES, SPECTRAL ENERGY DISTRIBUTION,
POWER SPECTRA, RADIO FIELDS

(U)

A SERIES OF MEASUREMENTS WAS TAKEN TO CHARACTERIZE
THE MICROWAVE FIELDS PRODUCED FOR BIOLOGICAL STUDIES
BY TRAVELING-WAVE-TUBE AND MAGNETRON GENERATORS UNDER
DIFFERENT OPERATING CONDITIONS. RESULTS INDICATE
THAT THE FIELD INCIDENT ON THE ANIMAL CAN DIFFER
DEPENDING UPON BOTH THE GENERATOR AND THE CONDITIONS
OF ITS OPERATION. THESE DIFFERENCES MAY NOT BE
APPARENT IF THE FIELD IS DESCRIBED ONLY IN TERMS OF
AVERAGE POWER.

(U)

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA
RADIOBIOLOGY. (U)
NOV 77

UNCLASSIFIED

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AO47300

Rate	7.5%
Age	40
Age (60)	60

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A014 065 6/15
LOUISVILLE UNIV KY SCHOOL OF MEDICINE

CORRELATION OF ANIMAL, CRYPT, AND STEM CELL
SURVIVAL IN FISSION NEUTRON IRRADIATED
MICE: A CHEMICAL PROTECTION STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 71-DEC 74,
FEB 75 101P SIGDESTAD, CURTIS P. ;
CONTRACT: DADA17-72-C-2038

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOPROTECTIVE AGENTS, *DRUGS,
RADIOBIOLOGY, X RAYS, NEUTRON IRRADIATION,
GASTROINTESTINAL SYSTEM, HEMOPOIETIC SYSTEM,
PATHOLOGY, PHARMACOLOGY, DOSAGE (U)

THE REPORT SURVEYS THE EFFECTIVENESS OF NEWLY
SYNTHESIZED ANTIRADIATION COMPOUNDS (WR-2721, WR-
77913, WR-638, WR-1607, WR-2347, WR-3689,
WR-109342, WR-2822, AND WR-2823) IN
COMPARISON WITH THE OTHER PROTECTORS (MEA AND
AET). THE EFFECTS OF HIGH ENERGY X-RAYS (4
MEV) AND FISSION NEUTRONS WAS TESTED ON (1)
INTESTINAL CRYPT SURVIVAL, (2) LETHALITY, LD50
AND (3) TOTAL AND PER CRYPT CELLULARITY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 068 6/18 6/6
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD
ELECTROMAGNETIC RADIATION PROJECT OFFICE

COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL
AND ECOLOGICAL RESEARCH REPORTS. VOLUME
I.

(U)

FEB 75 744P
REPT. NO. EMPRO-2-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A015
069.

DESCRIPTORS: *EXTREMELY LOW FREQUENCY,
*ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY,
RADIATION EFFECTS, IONIZING RADIATION, ECOLOGY,
MEDICAL RESEARCH

(U)

IDENTIFIERS: *RADIOECOLOGY

(U)

THIS VOLUME IS ONE OF SEVERAL WHICH COMBINED IS A
COMPILATION OF ALL RESEARCH REPORTS AND PAPERS TO
DATE WHICH DESCRIBE THE EXTREMELY LOW FREQUENCY
(ELF) RESEARCH PERFORMED UNDER THE SANGUINE
BIOLOGICAL-ECOLOGICAL RESEARCH PROGRAM. IT
INCLUDES ALL FINAL REPORTS, TECHNICAL REPORTS, AND
PAPERS WRITTEN BY THE INVESTIGATORS WHO PERFORMED THE
RESEARCH. EACH DOCUMENT APPEARING IN THESE VOLUMES
WAS PRINTED FROM AN UNEDITED COPY OF THE
INVESTIGATOR'S REPORT OR FROM AN UNEDITED COPY OF A
PAPER WRITTEN BY THE INVESTIGATOR. NO ATTEMPT WAS
MADE TO SUMMARIZE THE INVESTIGATOR'S RESULTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 069 6/18 6/6
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD
ELECTROMAGNETIC RADIATION PROJECT OFFICE

COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL
AND ECOLOGICAL RESEARCH REPORTS. VOLUME
II.

(U)

FEB 75 734P
REPT. NO. EMRP0-2-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-A015
068.

DESCRIPTORS: *EXTREMELY LOW FREQUENCY,
*ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY,
RADIATION EFFECTS, IONIZING RADIATION, ECOLOGY,
MEDICAL RESEARCH

(U)

IDENTIFIERS: *RADIOECOLOGY

(U)

THIS VOLUME IS ONE OF SEVERAL WHICH COMBINED IS A
COMPILATION OF ALL RESEARCH REPORTS AND PAPERS TO
DATE WHICH DESCRIBE THE EXTREMELY LOW FREQUENCY
(ELF) RESEARCH PERFORMED UNDER THE SANGUINE
BIOLOGICAL-ECOLOGICAL RESEARCH PROGRAM. IT
INCLUDES ALL FINAL REPORTS, TECHNICAL REPORTS, AND
PAPERS WRITTEN BY THE INVESTIGATORS WHO PERFORMED THE
RESEARCH. EACH DOCUMENT APPEARING IN THESE VOLUMES
WAS PRINTED FROM AN UNEDITED COPY OF THE
INVESTIGATOR'S REPORT OR FROM AN UNEDITED COPY OF A
PAPER WRITTEN BY THE INVESTIGATOR. NO ATTEMPT WAS
MADE TO SUMMARIZE THE INVESTIGATOR'S RESULTS.

(U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 187 6/18
STANFORD RESEARCH INST MENLO PARK CALIF

RADIOBIOLOGY OF LARGE ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT. AUG 69-JUN 75,
JUN 75 161P KREBS, JOHN S. ; JONES, DAVID
C. L. ;
CONTRACT: DAHC20-70-C-0219
PROJ: SRI-PYU-8150

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION EFFECTS,
*IONIZING RADIATION, MAMMALS, SHEEP,
EXPERIMENTAL DATA, RADIATION DOSAGE,
RESPONSE(BIOLOGY), LABORATORY ANIMALS, DOSE
RATE, LETHALITY, HEMATOLOGY, PHYSIOLOGICAL
EFFECTS, GAMMA RAYS, BONE MARROW (U)

CONTENTS: LETHALITY IN SHEEP EXPOSED TO 60CO
GAMMA RADIATION USING VARIOUS EXPOSURE PARAMETERS;
HEMATOLOGICAL FINDINGS IN SHEEP EXPOSED TO LETHAL
LEVELS OF 60CO GAMMA RAYS AT VARIOUS DOSE RATES AND
UNDER VARIOUS CONDITIONS OF EXPOSURE; CELLULAR
CHANGES IN BONE MARROW OF MICE AND SHEEP DURING AND
AFTER EXPOSURE TO 60CO GAMMA RAYS; BIOLOGICAL AND
MATHEMATICAL ANALYSIS OF LETHALITY IN LARGE ANIMALS
EXPOSED TO IONIZING RADIATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 200 6/18
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

RADIATION HAZARDS.

(U)

AUG 75 155P
REPT. NO. AGARD-LS-78

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION HAZARDS, *RADIOBIOLOGY,
RADIATION EFFECTS, ELECTROMAGNETIC RADIATION,
MICROWAVES, ULTRASONIC RADIATION, BIOPHYSICS,
CARDIAC PACEMAKERS, HEALTH PHYSICS, PHYSICAL
PROPERTIES, NATO

(U)

IDENTIFIERS: MICROWAVE RADIOBIOLOGY

(U)

CONTENTS: BIOLOGIC AND PATHOPHYSIOLOGIC EFFECTS
OF EXPOSURE TO MICROWAVE OR ULTRASONIC ENERGY;
PATHOPHYSIOLOGICAL ASPECTS OF EXPOSURE TO
MICROWAVES; PHYSICAL ASPECTS - ULTRASOUND;
BIOPHYSICS - ENERGY ABSORPTION AND DISTRIBUTION;
ELECTROMAGNETIC RADIATION: EFFECTS ON THE EYE;
ENDOCRINE AND CENTRAL NERVOUS SYSTEM EFFECTS OF
MICROWAVE EXPOSURE; MICROWAVE INDUCED ACOUSTIC
EFFECTS IN MAMMALIAN AUDITORY SYSTEMS; BIOLOGICAL
EFFECTS OF ULTRASOUND; ENGINEERING CONSIDERATIONS
AND MEASUREMENTS; ELECTROMAGNETIC INTERFERENCE OF
CARDIAC PACEMAKERS; ON EMP SAFETY HAZARDS;
PROTECTION GUIDES AND STANDARDS FOR MICROWAVE
EXPOSURE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 459 6/18

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

EFFECT OF 19 MHZ RF RADIATION ON
NEUROTRANSMITTERS IN MOUSE BRAIN.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. NOV 74-FEB 75,
AUG 75 8P MERRITT, JAMES H. ; FRAZER,
JAMES W. ;

REPT. NO. SAM-TR-75-28

PROJ: AF-7757

TASK: 775701

UNCLASSIFIED REPORT

DESCRIPTORS: *NEUROCHEMISTRY, *ELECTROMAGNETIC
RADIATION, *RADIATION EFFECTS, *NEUROMUSCULAR
TRANSMISSION, *BRAIN, RADIOBIOLOGY, HIGH
FREQUENCY, CENTRAL NERVOUS SYSTEM, DOPAMINE,
SEROTONIN, AMINES, MICE, EXPERIMENTAL DATA,
VANILLIC ACIDS

(U)

IDENTIFIERS: NOREPINEPHRINE, INDOLE ACETIC ACID/5-
HYDROXY

(U)

MICE WERE EXPOSED TO 19 MHZ RADIOFREQUENCY
RADIATION AND THEN EUTHANIZED BY MICROWAVE-HEATING
BRAIN INACTIVATION. BRAIN LEVELS OF 5-
HYDROXYINDOLE ACETIC ACID (5HIAA), HOMOVANILLIC
ACID (HVA), SEROTONIN (5HT), NOREPINEPHRINE
(NE), AND DOPAMINE (DA) WERE NOT ALTERED BY THIS
RADIATION. BRAIN CONCENTRATION OF 5HIAA, 5 HT,
NE, AND DA WAS HIGHER WHEN CONTROL ANIMALS WERE
EUTHANIZED BY MICROWAVE INACTIVATION THAN BY CERVICAL
DISLOCATION.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A015 622 6/18
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA
MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 6.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT.,
JUN 75 21P GLASER, ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-784 007.

DESCRIPTORS: *RADIOBIOLOGY, *RADIOFREQUENCY,
*BIBLIOGRAPHIES, ELECTROMAGNETIC RADIATION,
RADIATION EFFECTS, MEDICAL RESEARCH, RADIO WAVES,
RADIATION HAZARDS, HUMANS

(U)

IDENTIFIERS: *MICROWAVE RADIOBIOLOGY,
*ELECTROMAGNETIC RADIATION HAZARDS

(U)

ALMOST 250 ADDITIONAL REFERENCES ON THE BIOLOGICAL
RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION,
PUBLISHED UP TO JUNE 1975, ARE INCLUDED IN THIS
BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR
ATTENTION HAS BEEN PAID TO THE EFFECTS OF NON-
IONIZING RADIATION ON MAN AT THESE FREQUENCIES. THE
CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR
(WHERE POSSIBLE), AND CONTAIN AS MUCH INFORMATION
AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF
THE ORIGINAL DOCUMENTS. SOVIET AND EAST
EUROPEAN LITERATURE IS INCLUDED IN DETAIL.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A016 801 6/18 6/15
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

RADIATION-RELEASED HISTAMINE IN THE RHESUS
MONKEY AS MODIFIED BY MAST CELL DEPLETION
AND ANTIHISTAMINE.

(U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
JUN 75 14P DOYLE, T. F. ; STRIKE, T.

A. ;

REPT. NO. AFRR1-SR75-18
PROJ: LNA-NWED-QAXM
TASK: C906

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *HISTAMINE, MAST
CELLS, DEPLETION, ANTIHISTAMINICS, RHESUS MONKEYS,
CATABOLISM, RADIATION DOSAGE, HYPOTENSION,
RESPONSE(BIOLOGY), CONCENTRATION(CHEMISTRY),
BLOOD CHEMISTRY, BLOOD PRESSURE, GAMMA RAYS,
NEUTRON IRRADIATION

(U)

IDENTIFIERS: CHLORPHENIRAMINE

(U)

CHANGES IN BLOOD HISTAMINE CONCENTRATIONS OF RHESUS
MONKEYS WERE MEASURED AFTER A 4000-RAD DOSE OF MIXED
GAMMA-NEUTRON RADIATION. ALL ANIMALS WERE
PRETREATED WITH AMINO-GUANIDINE TO RETARD HISTAMINE
CATABOLISM. HISTAMINE CONCENTRATIONS INCREASED FROM
26 + OR - 13.5 TO 235 + OR - 16 NG/ML AFTER
IRRADIATION. WHEN THE ANIMALS WERE PRETREATED WITH
AN ANTIHISTAMINE, CHLORPHENIRAMINE (3 MG/KG),
HISTAMINE CONCENTRATIONS CHANGED FROM 25.7 + OR -
13.5 TO 462 + OR - 226 NG/ML AFTER IRRADIATION.
WHEN THE MONKEYS WERE PRETREATED WITH A SPECIFIC
MAST CELL HISTAMINE DEPLETER, COMPOUND 48/80 (1MG/
KG PER DAY) FOR FOUR CONSECUTIVE DAYS AND THEN
IRRADIATED (4000 RADS), HISTAMINE CONCENTRATIONS
DID NOT CHANGE SIGNIFICANTLY. WHEN 48/80 WAS GIVEN
20 MIN AFTER IRRADIATION, HISTAMINE CONCENTRATIONS
CHANGED FROM 18 + OR - 2 NG/ML TO A MAXIMUM OF 35
+ OR - 9 NG/ML AFTER 48/80 INJECTION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A022 462 6/18 6/16
WASHINGTON UNIV SEATTLE BIOELECTROMAGNETICS RESEARCH
LAB

THE EFFECTS OF ELECTROMAGNETIC FIELDS ON
THE NERVOUS SYSTEM,

(U)

AUG 75 122P CHOU, CHUNG-KWANG ; GUY,
ARTHUR W. ;
REPT. NO. SCIENTIFIC-6
CONTRACT: N00014-75-C-0464, NSF-GK-34730
PROJ: NR-201-054

UNCLASSIFIED REPORT

DESCRIPTORS: *NERVOUS SYSTEM, *ELECTROMAGNETIC
FIELDS, *MICROWAVES, *RADIOBIOLOGY, RADIATION
EFFECTS, MUSCLES, COCHLEA, EAR, GUINEA PIGS,
NEUROMUSCULAR TRANSMISSION, GANGLIA,
ELECTROPHYSIOLOGY, DIELECTRIC PROPERTIES, NERVE
CELLS, SCIATIC NERVE, DIAPHRAGMS (ANATOMY),
AUDITORY SIGNALS, TRANSIENTS, CATS, FROGS,
AUDITORY NERVE, THERMAL STRESSES, RADIATION
HAZARDS

(U)

IDENTIFIERS: EVOKED POTENTIALS, MICROPHONICS

(U)

CONTENTS: ELECTROMAGNETIC FIELD-
BIOMATERIAL INTERACTION AND METHODS OF
MEASUREMENT; EFFECTS OF ELECTROMAGNETIC
FIELDS ON ISOLATED NERVES AND SUPERIOR
CERVICAL GANGLIA; DESIGN OF WAVEGUIDE
APPARATUS, AND CALCULATION OF SPECIFIC
ABSORPTION RATE; EFFECTS OF ELECTROMAGNETIC
FIELDS ON MUSCLE CONTRACTION; EFFECTS OF
ELECTROMAGNETIC FIELDS ON AUDITORY SYSTEM;
EFFECT OF NOISE MASKING ON THRESHOLD OF
EVOKED AUDITORY RESPONSES, MICROWAVE-INDUCED
COCHLEAR MICROPHONICS IN GUINEA PIGS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A023 094 6/18
IIT RESEARCH INST CHICAGO ILL

ELF ELECTROMAGNETIC FIELD EFFECTS ON LIFE
FORMS - BIBLIOGRAPHY.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 76 183P FORMANEK, VINCENT C. ;
REPT. NO. IITRI-E6249-TR-2
CONTRACT: N00039-73-C-0030
PROJ: IITRI-E6249

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *ELECTROMAGNETIC
FIELDS, *RADIOBIOLOGY, *EXTREMELY LOW FREQUENCY,
BIBLIOGRAPHIES, ALTERNATING CURRENT, CARDIAC
PACEMAKERS, BEHAVIOR, ORIENTATION(DIRECTION),
MIGRATION, BIOLOGICAL RHYTHMS, METABOLISM,
BIOINSTRUMENTATION, SAFETY,
SENSES(PHYSIOLOGY), SLEEP, REPRODUCTION,
HEALTH, GENETICS, ENZYMES

(U)

DURING THE COURSE OF A STUDY, SUPPORTED BY AN
IITRI PROJECT WITH THE ELECTRIC POWER
RESEARCH INSTITUTE, SOME 2300 REFERENCES WERE
IDENTIFIED WHICH WERE THEN REDUCED TO SOME 800
CITATIONS. WITH THAT AS A STARTING POINT, THIS
BIBLIOGRAPHY HAS BEEN PREPARED TO AID IN THE
ASSESSMENT OF EXTREMELY LOW FREQUENCY BIOLOGICAL
RESEARCH. THIS BIBLIOGRAPHY EMPHASIZES THE
FOLLOWING AREAS: (1) AC ELECTRIC AND
MAGNETIC FIELDS, BIOLOGICAL EFFECTS BETWEEN 45-75
HERTZ; (2) AC ELECTRIC AND MAGNETIC FIELDS,
ALPHA-RHYTHM INTERACTIONS BETWEEN 1-15 HERTZ;
(3) AC ELECTRIC AND MAGNETIC FIELD INFLUENCES
ON PATIENTS WITH CARDIAC PACEMAKERS; (4)
BEHAVIORAL INFLUENCES: (A) MIGRATION (B)
ORIENTATION (C) SENSING-DETECTION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A023 119 6/18

ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1974-30 JUNE
1975.

(U)

JUN 75 104P
REPT. NO. AFRRI-ARR-9

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 74,
AD-A009 327.

DESCRIPTORS: *RADIOBIOLOGY, *MEDICAL RESEARCH,
SCIENTIFIC RESEARCH, RADIATION DOSAGE, RADIATION
EFFECTS, IMMUNOLOGY, BEHAVIOR, BIOCHEMISTRY,
PHARMACOLOGY, TOXICOLOGY, PATHOLOGY, PHYSIOLOGY,
NEOPLASMS, NEUROLOGY

(U)

IDENTIFIERS: RADIOPHARMACEUTICAL AGENTS

(U)

;CONTENTS: MITIGATION OF GRAFT VERSUS HOST
DISEASE IN LETHALLY IRRADIATED MICE GRAFTED WITH
SPLEEN CELLS ADHERENT TO GLASS BEADS; STUDIES ON
THE DISTRIBUTION AND METABOLISM OF CYCLOTRIMETHYLENE-
TRINITRAMINE IN THE RAT AND IN THE MINIATURE SWINE;
SERUM PROTEIN-BOUND CARBOHYDRATES AND NEUROGENIC
TUMORS; A METHOD OF LOCALIZATION FOR RADIONUCLIDE
BONE IMAGING IN THE MANDIBLE; ACUTE RADIATION
SICKNESS--THE PRODROMAL SYNDROME. AN ANNOTATED
BIBLIOGRAPHY; THE EFFECT OF A SIMULATED
SUBARACHNOID HEMORRHAGE ON CEREBRAL BLOOD FLOW IN THE
MONKEY; KINEMATICS OF KNEE MOTION DURING A
SIMULATED CAR CRASH; IMMUNOENHANCEMENT AND NEURAL
ONCOGENESIS; DEPRESSION OF DOPAMINE RELEASE DURING
THE ETHANOL WITHDRAWAL SYNDROME; NONEXCHANGEABLE
WATER IN RAT SKELETAL MUSCLE; MONKEY BRAIN DAMAGE
FROM RADIATION IN THE THERAPEUTIC RANGE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A027 061 6/6
NAVAL ELECTRONIC SYSTEMS COMMAND WASHINGTON D C

NAVY SPONSORED ELF BIOLOGICAL AND
ECOLOGICAL RESEARCH SUMMARY (UPDATE).

(U)

MAY 76 73P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES AD-A015 299.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION,
*RADIOBIOLOGY, *ECOLOGY, RADIATION EFFECTS,
EXTREMELY LOW FREQUENCY, RADIATION DOSAGE, HUMANS,
ANIMALS, PLANTS(BOTANY), MICROORGANISMS,
BOOKS, GENETICS, PERFORMANCE(HUMAN), DIURNAL
VARIATIONS, PHYSIOLOGY

(U)

IDENTIFIERS: *RADIOECOLOGY

(U)

ELF IS THE NAVY'S EXTREMELY LOW FREQUENCY
SUBMARINE COMMUNICATIONS SYSTEM. THE PROJECT IS
CURRENTLY IN THE RESEARCH AND DEVELOPMENT STAGE.
THIS BOOKLET (A) SUMMARIZES THE PROGRESS OF
NAVY SPONSORED BIOLOGICAL/ECOLOGICAL RESEARCH
STUDIES INITIATED TO DETERMINE THE EFFECTS OF
ELECTROMAGNETIC FIELDS IN THE ELF RANGE, AND
(B) LISTS THE PUBLICATIONS OF EACH PRINCIPAL
INVESTIGATOR. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A035 844 6/18 6/5
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

BIOPHYSICAL PROBLEMS IN AEROSPACE MEDICINE
(PROBLEMS BIOPHYSIQUES PARTICULIERS DE LA
MEDECINE AEROSPATIALE).

(U)

DESCRIPTIVE NOTE: ADVISORY REPT.

DEC 76 164P

REPT. NO. AGARD-AR-84

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TEXT IN ENGLISH AND FRENCH. NATO
FURNISHED.

DESCRIPTORS: *AEROSPACE MEDICINE, *RADIOBIOLOGY,
ELECTROMAGNETIC RADIATION, LASER HAZARDS,
RADIATION EFFECTS, MILITARY PERSONNEL, COSMIC
RAYS, HIGH ALTITUDE, BIOPHYSICS, MICROWAVES
IDENTIFIERS: RADIATION EFFECTS(BIOLOGY),
AGARD

(U)

(U)

THIS PUBLICATION CONTAINS PAPERS PREPARED BY AN
AEROSPACE MEDICAL PANEL WORKING GROUP.
THE FIVE PAPERS ARE AS FOLLOWS: COSMIC
RADIATION DOSES AT AIRCRAFT ALTITUDES;
BIOLOGICAL STUDIES OF COSMIC RAYS;
RADIOBIOLOGICAL PROBLEMS OF HIGH ALTITUDE
FLIGHTS; NON-IONISING ELECTROMAGNETIC
FIELDS; ENVIRONMENTAL FACTORS IN RELATION TO
MILITARY PERSONNEL; AND MEDICAL ASPECTS OF
LASERS AND LASER SAFETY PROBLEMS.
(AUTHOR)

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ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1975 -- 30
SEPTEMBER 1976.

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BACTERIAL TOXINS, IMMUNOLOGY, INSECTICIDES,
ERYTHROCYTES, LEUKOCYTES, BRAIN,
TOLERANCES(PHYSIOLOGY), PROTEINS, RADIOACTIVE
ISOTOPES, THYROID GLAND, CARDIOVASCULAR SYSTEM,
PROSTAGLANDIN, NERVOUS SYSTEM,
SENSES(PHYSIOLOGY), TOXICITY, ORGANOMETALLIC
COMPOUNDS, DRUGS, ADENOSINE PHOSPHATES

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THIS REPORT CONTAINS A SUMMARY OF THE RESEARCH
PROJECTS OF THE ARMED FORCES RADIOBIOLOGY
RESEARCH INSTITUTE FOR THE PERIOD 1 JULY 1975
TO 30 SEPTEMBER 1976. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-A043 706 6/18
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

OPERANT BEHAVIOR AND COLONIC TEMPERATURE OF
SQUIRREL MONKEYS (SAIMIRI SCIUREUS) DURING
MICROWAVE IRRADIATION.

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DESCRIPTIVE NOTE: INTERIM REPT.,
JUN 77 33P DE LORGE, JOHN ;
REPT. NO. NAMRL-1236
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DESCRIPTORS: *MICROWAVES, *RADIOBIOLOGY, *SQUIRREL
MONKEYS, *RADIATION EFFECTS, BODY TEMPERATURE,
BEHAVIOR

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IDENTIFIERS: RADIATION EFFECTS(BIOLOGY),
PE62758N, WU0037

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CONTEMPORARY REPORTS IN THE SCIENTIFIC AND POPULAR
PRESS OF POTENTIALLY HAZARDOUS EFFECTS OF EXPOSURE TO
MICROWAVES REQUIRE SUBSTANTIATION BECAUSE SOME NAVY
PERSONNEL CONTACT A VARIETY OF MICROWAVE DEVICES IN
COMMUNICATION, WARNING AND WEAPONS SYSTEMS. SUCH
PUTATIVE EFFECTS PRECLUDE THE USE OF MAN AS A
SUBJECT; HENCE, A SERIES OF EXPERIMENTS WITH OTHER
PRIMATES, MONKEYS, HAS BEEN INITIATED. RESEARCH IN
OUR LABORATORY HAS ESTABLISHED THAT MICROWAVE
IRRADIATION GREATER THAN 62 MW/SQ CM DISRUPTS
BEHAVIOR IN RHESUS MONKEYS. IN AN EFFORT TO EXTEND
THE GENERALITY OF THIS FINDING, SQUIRREL MONKEYS ARE
EXPOSED TO MICROWAVES. THE BEHAVIOR OF SQUIRREL
MONKEYS ON A VIGILANCE TASK WAS DISRUPTED BY 30- OR
60-MINUTE EXPOSURES TO 50 MW/SQ CM AND HIGHER POWER
DENSITIES. THIS DISRUPTION INCREASED WITH THE
INCREASE IN POWER DENSITY. UNDER BOTH DURATIONS OF
EXPOSURE, BEHAVIOR WAS NOT CONSISTENTLY PERTURBED
UNTIL COLONIC TEMPERATURE CHANGES EXCEEDED 1 C.
COLONIC TEMPERATURES REGULARLY INCREASED BEGINNING
AT 10 MW/SQ CM AND WERE RELATED IN A NONLINEAR
FASHION TO THE POWER DENSITY WITH A MARKED
ACCELERATION BETWEEN 40 AND 50 MW/SQ CM.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD-B000 673 6/18 13/12
ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GROUND
MD

INFRARED HEAT LAMPS USED IN DRYING CHEMICAL
SAMPLES, SEPTEMBER-OCTOBER 1974. (U)

DESCRIPTIVE NOTE: RADIATION PROTECTION SPECIAL STUDY,
OCT 74 10P SLINNEY, DAVID H. ; FRANKS,
JAMES K. ; CREWS, DARIUS ;
REPT. NO. USAEHA-42-043-75

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DESCRIPTORS: (*EYE, RADIATION PROTECTION),
(*RADIOBIOLOGY, INFRARED RADIATION), (*RADIATION
HAZARDS, *INFRARED LAMPS), (*SAFETY EQUIPMENT,
EYEGLASSES), DRYING APPARATUS, RADIATION
INJURIES, SAFETY, REFLECTIVITY, DOSIMETERS,
HEATING, DOSE RATE, HEAT TOLERANCE, RADIATION
TOLERANCE, HEAT FLUX, RADIATION DOSAGE, PROTECTIVE
EQUIPMENT (U)
IDENTIFIERS: *EYE SAFETY (U)

A SPECIAL STUDY OF THE INFRARED HEAT LAMPS USED IN
THE RADIOLOGICAL AND BIOLOGICAL CHEMISTRY
DIVISION OF THE US ARMY ENVIRONMENTAL
HYGIENE AGENCY TO DRY SAMPLES WAS CONDUCTED
DURING THE PERIOD SEPTEMBER-OCTOBER 1974. IT
WAS CONCLUDED THAT A PERSONNEL HAZARD FROM INFRARED
RADIATION DID NOT EXIST; HOWEVER, CONTINUOUS VIEWING
OF THE LIGHT REFLECTED FROM THE PLANCHETTE EXCEEDS
CURRENT RECOMMENDED LIMITS. (AUTHOR) (U)

UNCLASSIFIED

PERSONAL AUTHOR INDEX

- AARESTAD, NORMAN O. . . .
IN VIVO DOSIMETRY BY ELECTRON SPIN
RESONANCE SPECTROSCOPY,
AD- 672 621
- AINSWORTH, E. J. . . .
ALTERED RECUPERATIVE POTENTIAL IN
PREVIOUSLY IRRADIATED MICE,
AD- 651 879
- AINSWORTH, E. JOHN . . .
THE INFLUENCE OF AET AND HYPOXIA ON
RECOVERY FROM RADIATION INJURY IN
MICE,
AD- 465 242
- AKOEV, I. G. . . .
RELATIVE BIOLOGICAL EFFECTIVENESS
OF IRRADIATION--THE TIME FACTOR IN
IRRADIATION,
AD- 714 421
- ALBANESE, RICHARD A. . . .
AIRCREW VULNERABILITY IN NUCLEAR
ENCOUNTERS.
AD- 783 772
- ALBRIGHT, MARION L. . . .
AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.
AD- 722 324
- ALPEN, E. L. . . .
COMPARATIVE EFFECTS OF 50 KVP AND
250 KVP X RAYS ON THE DOG
AD- 400 635
- AMEY, E. A. . . .
THE EFFECT OF RADIOPROTECTIVE
AGENTS ON STEM CELL RECOVERY AFTER
IRRADIATION,
AD- 689 941
- ANDERSON, PEARL
CLEARANCE OF IRON FROM
HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO,
AD- 455 892
- EFFECT OF HEMOLYSIS ON EXCRETION
AND ACCUMULATION OF IRON IN THE
RAT,
AD- 455 900
- ANTONYAN, S. G. . . .
EFFECT OF IONIZING RADIATION ON THE
HEART; REACTION OF THE HEART IN
NORMAL CONDITIONS TO RADIATION,
AD- 627 069
- ATKINSON, J. L. . . .
BIOLOGICAL MEASUREMENTS IN RODENTS
EXPOSED CONTINUOUSLY THROUGHOUT
THEIR ADULT LIFE TO PULSED
ELECTROMAGNETIC RADIATION.
AD-AD13 250
- BABSKII, E. D. . . .
RADIOBIOLOGY: THE RADIATION INJURY
MECHANISM IN MOUSE OVARIES AND
ELECTRICAL STIMULATION OF THE HEART
BY MEANS OF RADIOFREQUENCY IMPULSE
TRANSMISSION,
AD- 402 519
- BAKER, D. G. . . .
CLEARING FACTOR LIPASE AND THE
IRRADIATION SYNDROME,
AD- 449 639
- BALCERZAK, STANLEY P. . . .
CLEARANCE OF IRON FROM
HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO,
AD- 455 892
- BALLUET, M. . . .
- BARMANOV, S. B. . . .
THE DISTRIBUTION OF DOSE IN TIME
DURING RADIATION THERAPY OF
MALIGNANT TUMORS,
AD- 749 763
- BAROYAN, O. V. . . .
BIOCHEMICAL MECHANISMS OF RADIATION
SICKNESS (AND) THE PROBLEM OF
SCIENTIFICALLY SUBSTANTIATING THE
DEGREE OF EPIDEMIOLOGICAL
EFFECTIVENESS OF VARIOUS VACCINES
AD- 298 314
- BARSEGYAN, L. KH. . . .
EFFECT OF LASER BEAMS ON BIOLOGICAL
OBJECTS (VOZDEISTVIE LUCHEI
KVANTOVOGO GENERATORA (LAZFRA) NA
BIOLOGICHESKIE OBJEKTY),
AD- 752 699
- BAUM, S. J. . . .
COMPARATIVE EFFECTS OF 50 KVP AND
250 KVP X RAYS ON THE DOG
AD- 400 635
- BAUM, S. J. . . .
BIOLOGICAL EFFECTS IN RODENTS
EXPOSED TO PULSED ELECTROMAGNETIC
RADIATION.
AD- 762 038
- BIOLOGICAL MEASUREMENTS IN RODENTS
EXPOSED CONTINUOUSLY THROUGHOUT
THEIR ADULT LIFE TO PULSED
ELECTROMAGNETIC RADIATION.
AD-AD13 250
- BEASLEY, T. M. . . .

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UNCLASSIFIED

- CONTRIBUTIONS FROM THE ALPHA
EMITTER, POLONIUM-210, TO THE
NATURAL RADIATION ENVIRONMENT OF
THE MARINE ORGANISMS.
AD- 770 926
- BEATTIE, JOHN M. . . .
FLUOROMETRIC DETECTION OF BIOLOGIC
CHANGES IN IRRADIATED LABORATORY
ANIMALS.
AD- 672 819
- BERNIER, GEORGE M. . . .
FERRITIN PRODUCTION IN THE RAT
SMALL INTESTINE.
AD- 715 541
- BILOKRYNITSKYI, V. S. . . .
CHANGES IN THE TIGROID SUBSTANCE OF
NEURONS UNDER THE EFFECT OF RADIO
WAVES.
AD- 649 460
- BIRDWELL, THOMAS R. . . .
EARLY ALVEOLAR CELL MITOTIC
ACTIVITY AND PULMONARY TUMOR
INCIDENCE IN URETHAN TREATED X-
IRRADIATED MICE.
AD- 671 054
- BOLLINGER, JAMES M. . . .
THE EFFECTS OF IONIZING RADIATION
ON OXIDATION STATES OF BIOLOGICAL
SYSTEMS.
AD- 639 192
- BOSCH, ANTONIO
EFFECTS OF TRIIODOTHYRONINE IN
ALTERING THE RESPONSE OF KIDNEYS TO
COBALT-60 RADIATION.
AD- 611 687
- BOUNOUS, G.
PROTECTIVE EFFECT OF AN ELEMENTAL
- DIET ON RADIATION ENTEROPATHY IN
THE MOUSE.
AD- 782 595
- BOWSER, B. T.
HUMORAL ANTIBODY RESPONSES IN
NEWBORN MONKEYS AFTER MIXED GAMMA-
NEUTRON IRRADIATION.
AD- 724 294
- BRADY, JOHN M.
IN VIVO DOSIMETRY BY ELECTRON SPIN
RESONANCE SPECTROSCOPY.
AD- 672 621
- BREGADZE, YU. I.
NEUTRONS IN RADIOBIOLOGICAL
EXPERIMENTS.
AD- 691 153
- BRONNIKOVA, I. A.
HYGIENIC EVALUATION OF FOOD RATIONS
WITH PREDOMINANCE OF VEGETABLE
PRODUCTS SUBJECTED TO GAMMA-
IRRADIATION.
AD-ADDD 204
- BROWN, FRANK A., JR
DIURNAL VARIATION IN ORGANISMIC
RESPONSE TO VERY WEAK GAMMA
RADIATION.
AD- 647 936
- BROWN, SIDNEY O.
A STUDY OF BONE CHANGES IN ALBINO
RATS SUBJECTED TO LOW INTENSITY
COBALT-60 GAMMA RADIATION
AD- 283 327
- BROWNELL, ARNOLD S.
OCULAR AND SKIN HAZARDS FROM CO2
LASER RADIATION.
AD- 785 609
- CONTRIBUTIONS FROM THE ALPHA
EMITTER, POLONIUM-210, TO THE
NATURAL RADIATION ENVIRONMENT OF
THE MARINE ORGANISMS.
AD- 770 926
- BUCCI, THOMAS J.
LATE HISTOPATHOLOGICAL CHANGES IN
KIDNEYS OF GRID-IRRADIATED MICE,
AD- 652 941
- BUENKERT, J. E.
THE EFFECTS OF LOCAL SUPRALETHAL
IRRADIATION ON RENAL FUNCTION.
AD-ADDD 940
- CALDWELL, WILLIAM L.
EFFECTS OF TRIIODOTHYRONINE IN
ALTERING THE RESPONSE OF KIDNEYS TO
COBALT-60 RADIATION.
AD- 611 687
- CARPENTER, RUSSELL L.
THE ACTION OF MICROWAVE RADIATION
ON THE EYE.
AD- 668 619
- CARTER, ROBERT E.
AFPRI ELECTROMAGNETIC PULSE (EMP)
SIMULATOR.
AD- 770 113
- CASYANERA, T.J
THE RADIOBIOLOGY OF TEETH
AD- 285 094
- CASTANERA, TORIBIO J.
THE INFLUENCE OF WHOLE-BODY
EXPOSURE TO X-RAYS OR NEUTRONS ON
THE LIFE SPAN DISTRIBUTION OF
TUMORS AMONG MALE RATS.
AD- 653 063
- CATRAVAS, G. N.

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EFFECT OF X RAYS AND 60CO GAMMA
RAYS ON THE LIVER ENZYME SYSTEM
RESPONSIBLE FOR FATTY ACID
SYNTHESIS.
AD- 689 096

• • •
ACTIVITY OF RAT LIVER ENZYMES
RESPONSIBLE FOR GLYCOGEN METABOLISM
AFTER WHOLE-BODY IRRADIATION.
AD- 705 996

• • •
•CHARLES, P.
PENETRATION, FATE AND BIOLOGICAL
EFFECTS OF EXOGENOUS DNA INTO THE
CELLS OF IRRADIATED MAMMALIAN
TISSUES.
AD- 762 202

• • •
•CHARLES, POL
PENETRATION AND FATE OF EXOGENOUS
DNA INTO CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 715 018

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PENETRATION AND FATE OF EXOGENOUS
DNA IN CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 732 874

• • •
•CHOU, CHUNG-KWANG
THE EFFECTS OF ELECTROMAGNETIC
FIELDS ON THE NERVOUS SYSTEM,
AD-A022 462

• • •
•CLAJUS, P.
REPORT ON THE INTERNATIONAL SEMINAR
ON RADIATION PROTECTION,
ENVIRONMENT AND POPULATION (1ST)
HELD IN POTSDAM ON 16-21 OCT 72,
AD- 783 992

• • •
•CLIFFORD, C. E.
CHANGES IN ACUTE RADIATION HAZARDS
ASSOCIATED WITH CHANGES IN EXPOSURE
GEOMETRY,
• • •

AD- 708 812
•COLE, L. J.
INDUCTION OF HOMOGRAFT TOLERANCE IN
SUBLETHALLY X-IRRADIATED ADULT
MICE,
AD- 419 563

• • •
REJECTION OF ALLOGENEIC SKIN GRAFTS
AND PRODUCTION OF ISOHEMAGGLUTININS
BY SENSITIZED MICE AFTER SUBLETHAL
IRRADIATION.
AD- 466 883

• • •
CHROMOSOME ABNORMALITIES IN LIVER
AND MARROW OF MICE IRRADIATED WITH
FAST NEUTRONS, GAMMA-, AND X RAYS.
EFFECT OF DOSE RATE.
AD- 601 115

• • •
X-RAY INDUCED GLOMERULOSCLEROSIS IN
RATS: MODIFICATION OF LESION BY
FOOD RESTRICTION, UNINEPHRECTOMY,
AGE,
AD- 629 512

• • •
CHEMICAL RADIOPROTECTION OF
HEMOPOLYMER COLONY-FORMING CELLS:
COMPARATIVE EFFECT OF AET, ANOXIA
AND URETHAN,
AD- 669 787

• • •
•COLE, LEONARD J.
URETHAN-INDUCED LUNG TUMORS IN
MICE: X-RADIATION DOSE DEPENDENT
INHIBITION,
AD- 623 079

• • •
SYSTEMIC FACTOR IN RECOVERY OF RAT
KIDNEY FROM X IRRADIATION:
THYMIDINE-H3 INCORPORATION STUDIES,
AD- 627 569

• • •
ANTIBODY PLAQUE-FORMING CELLS IN
UNSENSITIZED MICE: SPECIFICITY AND
RESPONSE TO NEONATAL THYMECTOMY, X
IRRADIATION AND PHA.
AD- 653 864
• • •

CLONAL REPOPULATION IN RETICULAR
TISSUES OF X-IRRADIATED MICE:
EFFECT OF DOSE AND OF LIMB-
SHIELDING,
AD- 657 609

• • •
EARLY ALVEOLAR CELL MITOTIC
ACTIVITY AND PULMONARY TUMOR
INCIDENCE IN URETHAN TREATED X-
IRRADIATED MICE,
AD- 671 054

• • •
•CONANT, CHARLES M.
LATE HISTOPATHOLOGICAL CHANGES IN
KIDNEYS OF GRID-IRRADIATED MICE,
AD- 652 941

• • •
•CONRAD, MARCEL E.
IRON EXCRETION BY THE SKIN,
SELECTIVE LOCALIZATION OF IRON-59
IN EPITHELIAL CELLS,
AD- 455 894

• • •
•CONRAD, MARCEL E.
EFFECT OF COBALT UPON IRON
ABSORPTION (34B73),
AD- 714 326

• • •
FERRITIN PRODUCTION IN THE RAT
SMALL INTESTINE,
AD- 715 541

• • •
•CRAIG, D.
CHROMOSOME ABNORMALITIES IN LIVER
AND MARROW OF MICE IRRADIATED WITH
FAST NEUTRONS, GAMMA-, AND X RAYS.
EFFECT OF DOSE RATE.
AD- 601 115

• • •
•CREWS, DARIUS
INFRARED HEAT LAMPS USED IN DRYING
CHEMICAL SAMPLES, SEPTEMBER-OCTOBER
1974,
AD-8000 673

• • •
•CROMROY, HARVEY

UNCLASSIFIED P-3 ZOM07

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CELLULAR RESPONSE TO RADIATION.

AD- 668 686

•CROSSBY, WILLIAM.

STUDIES ON IRON ABSORPTION.
INTESTINAL REGULATORY MECHANISMS,

AD- 448 438

•••
CLEARANCE OF IRON FROM
HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO,

AD- 455 892

•••
IRON EXCRETION BY THE SKIN.
SELECTIVE LOCALIZATION OF IRON-59
IN EPITHELIAL CELLS,

AD- 455 894

•••
EFFECT OF HEMOLYSIS ON EXCRETION
AND ACCUMULATION OF IRON IN THE
RAT,

AD- 455 900

•••
THE ABSORPTION OF NONFERROUS METALS
IN IRON DEFICIENCY,

AD- 627 287

•CURRAN, C. R.

•••
PRIMATE PHYSICAL ACTIVITY
FOLLOWING EXPOSURE TO A SINGLE 2000-
RAD PULSED DOSE OF MIXED GAMMA-
NEUTRON RADIATION.

AD-A011 044

•DALRYMPLE, GLENN V.

•••
PROTON DEPTH-DOSE DOSIMETRY,

AD- 644 451

•••
ACUTE SOMATIC EFFECTS IN PRIMATES
OF PROTONS TO 400 MEV,

AD- 673 584

•DANNENBERG, ARTHUR M., JR

•••
INVESTIGATIONS OF THE PATHOLOGY OF
INFECTIOUS DISEASES AND
SUPPLEMENTARY CONSULTATION

SERVICES.

AD- 707 468

•DARENKAYA, N. G.

•••
RELATIVE BIOLOGICAL EFFECTIVENESS
OF IRRADIATION--THE TIME FACTOR IN
IRRADIATION,

AD- 714 421

•DAVIS, W. E.

•••
INDUCTION OF HOMOGRAFT TOLERANCE IN
SUBLETHALLY X-IRRADIATED ADULT
MICE,

AD- 419 563

•DAVIS, W. E., JR

•••
CHEMICAL RADIOPROTECTION OF
HEMOPOIETIC COLONY-FORMING CELLS:
COMPARATIVE EFFECT OF AET, ANOXIA
AND URETHAN,

AD- 669 787

•DAWSON, WILLIAM W.

•••
FUNCTION OF MAMMALIAN RETINA DURING
X-IRRADIATION.

AD- 653 848

•DEARMAN, JAMES R.

•••
SOME EFFECTS OF NEODYMIUM LASER
RADIATION UPON THE HEADS OF DOGS,

AD- 648 204

•DELAUNOIT, G.

•••
PENETRATION, FATE AND BIOLOGICAL
EFFECTS OF EXOGENOUS DNA INTO THE
CELLS OF IRRADIATED MAMMALIAN
TISSUES.

AD- 762 202

•DE LORGE, JOHN

•••
OPERANT BEHAVIOR AND COLONIC
TEMPERATURE OF SQUIRREL MONKEYS
(SAIIRI SCIUREUS) DURING MICROWAVE
IRRADIATION.

AD-A043 706

•DEMENTEV, V. P.

•••
EFFECT OF LASER BEAMS ON BIOLOGICAL
OBJECTS (VOZDEISTVIE LUCHEI
KVANTOVOGO GENERATORA (LAZERA) NA
BIOLOGICHESKIE OBEKTY),

AD- 752 699

•DEMETRIOU, JAMES A.

•••
FLUOROMETRIC DETECTION OF BIOLOGIC
CHANGES IN IRRADIATED LABORATORY
ANIMALS.

AD- 672 819

•DEMIS, D. JOSEPH

•••
IRON EXCRETION BY THE SKIN.
SELECTIVE LOCALIZATION OF IRON-59
IN EPITHELIAL CELLS,

AD- 455 894

•DIACHENKO, JOSEPH A.

•••
THE EFFECTS OF HIGH POWER PULSED
AND LOW LEVEL CW MICROWAVE
RADIATION ON AN OPERANT BEHAVIOR IN
RATS.

AD-A004 943

•DODGE, CHRISTOPHER

•••
SOVIET RESEARCH ON THE NEURAL
EFFECTS OF MICROWAVES.

AD- 645 979

•DONATI, ROBERT M.

•••
HISTOCHEMICAL INVESTIGATION OF THE
MUCOSA OF THE EXTERIORIZED SMALL
INTESTINE OF THE RAT EXPOSED TO X-
RADIATION,

AD- 689 947

•DOYLE, J. E.

•••
THE EFFECTS OF LOCAL SUPRALETHAL
IRRADIATION ON RENAL FUNCTION.

AD-A000 960

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- DOYLE, T. F. . . .
RADIATION-RELEASED HISTAMINE IN THE
RHEUS MONKEY AS MODIFIED BY MAST
CELL DEPLETION AND ANTIMISTAMINE.
AD-AD16 801
- DUBOIS, K. P. . . .
EFFECTS OF X-IRRADIATION ON THE
HEXOBARBITAL METABOLIZING ENZYME
SYSTEM OF RAT LIVER MICROSOMES.
AD- 637 574
- DUBOIS, KENNETH P. . . .
INFLUENCE OF X-IRRADIATION ON
DEVELOPMENT OF MICROsome OXIDASE
AND REDUCTASE ACTIVITY IN THE
LIVERS OF YOUNG MALE RATS.
AD- 601 792
- DUMASIA, M. D. . . .
BOUND WATER, INOSITOL, AND THE
EFFECT OF X-RAYS ON ESCHERICHIA
COLI.
AD- 618 263
- DZIUBALO-BLEHM, S. . . .
THE EFFECT OF RADIOPROTECTIVE
AGENTS ON ERYTHROPOIESIS IN
IRRADIATED MICE.
AD- 684 213
- THE EFFECT OF RADIOPROTECTIVE
AGENTS ON STEM CELL RECOVERY AFTER
IRRADIATION.
AD- 689 941
- EARLE, KENNETH M. . . .
SOME EFFECTS OF NEODYMIUM LASER
RADIATION UPON THE HEADS OF DOGS,
AD- 648 204
- EKSTROM, M. E. . . .
BIOLOGICAL MEASUREMENTS IN RODENTS
EXPOSED CONTINUOUSLY THROUGHOUT
- THEIR ADULT LIFE TO PULSED
ELECTROMAGNETIC RADIATION.
AD-AD13 250
- ELLINGER, FRIEDRICH . . .
PHARMACOLOGICAL STUDIES ON
IRRADIATED ANIMALS. PART I. SCOPE
AND METHODOLOGY.
AD- 491 993
- ETTENHUBER, E. . . .
REPORT ON THE INTERNATIONAL SEMINAR
ON RADIATION PROTECTION,
ENVIRONMENT AND POPULATION (1ST)
HELD IN POTSDAM ON 16-21 OCT 72,
AD- 783 992
- EWALD, W. G. . . .
THE EFFECTS OF LOCAL SUPRALETHAL
IRRADIATION ON RENAL FUNCTION.
AD-AD00 960
- EXUM, E. D. . . .
HUMORAL ANTIBODY RESPONSES IN
NEWBORN MONKEYS AFTER MIXED GAMMA-
NEUTRON IRRADIATION.
AD- 724 294
- FACEY, R. A. . . .
CHANGES IN ACUTE RADIATION HAZARDS
ASSOCIATED WITH CHANGES IN EXPOSURE
GEOMETRY,
AD- 708 812
- FAYTEL-BERNH, V. R. . . .
THE EFFECT OF CENTIMETER BAND RADIO
WAVES ON THE ABSORPTION OF AMINO
ACIDS, CHLORIDES AND WATER IN THE
STOMACH AND INTESTINES
AD- 400 580
- FELSHER, BERTRAM F. . . .
EFFECT OF COBALT UPON IRON
ABSORPTION (34873),
- AD- 714 326
- FINCH, EDWARD D. . . .
AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.
AD- 722 324
- FINEGOLD, MILTON J. . . .
PATHOLOGICAL CHANGES IN RABBITS
INJECTED WITH PASTEURELLA
TULARENSIS KILLED BY IONIZING
RADIATION,
AD- 692 342
- FLIEDNER, THEODOR M. . . .
SEMINAR ON CELL AND CELL SYSTEM
ECOLOGY, HELD IN PARIS, (FRANCE),
13-15 JUNE 1969,
AD- 720 601
- FOLEY, WILLIAM A. . . .
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MICE: X-RADIATION DOSE DEPENDENT
INHIBITION,
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OCEANIC AND COASTAL ORGANISMS,
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EMITTER, POLONIUM-210, TO THE
NATURAL RADIATION ENVIRONMENT OF
THE MARINE ORGANISMS,
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FOLLOWING EXPOSURE TO A SINGLE 2000-
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NEUTRON RADIATION.

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NEUROTRANSMITTERS IN MOUSE BRAIN.

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RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN
IMMUNOGLOBULINS.

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RADIATION UPON THE HEADS OF DOGS.

AD- 648 204

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AN EVALUATION OF POSSIBLE EFFECTS
OF 45 HZ, 60 HZ AND 75 HZ ELECTRIC
FIELDS ON NEUROPHYSIOLOGY AND
BEHAVIOR OF MONKEYS. PHASE I:
CONTINUOUS WAVE.

AD-A008 404

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IN IRON DEFICIENCY.

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FREQUENCY RADIATION ON HUMAN
PERFORMANCE: A PRELIMINARY STUDY.
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FRACTIONATED X IRRADIATION,
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RESEARCH

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ABSORPTION (34873).

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ELECTROMAGNETIC FIELDS ON GROWTH
AND DIFFERENTIATION OF 'PHYSARUM
POLYCEPHALUM'.
AD-A010 187

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AND 'RICKETTSIA AKARI' IN IRRADIATED
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HEMATOPOIETIC CENTERS USING SOPE IN
THE PRESENCE OF SICR AND I251.
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ELECTROMAGNETIC FIELDS ON GROWTH
AND DIFFERENTIATION OF 'PHYSARUM
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ON PERITONEAL AND CIRCULATING
LEUCOCYTES OF MICE.
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CIRCULATING AND PERITONEAL
MONONUCLEAR CELLS OF MICE TO TOTAL-
BODY X IRRADIATION,
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P-6
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FIELDS ON THE NERVOUS SYSTEM,
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IRRADIATED RATS,
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SMALL INTESTINE FOLLOWING WHOLE-
BODY X IRRADIATION.
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EXPOSURE,
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EXPOSURE TO X-RAYS OR NEUTRONS ON
THE LIFE SPAN DISTRIBUTION OF
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EXPOSURE TO X-RAYS OR NEUTRONS ON
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BIOLOGICAL COMPOUNDS,
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IRRADIATED AND SPLENECTOMIZED
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INVESTIGATIONS ON ARTIFICIAL EARTH
SATELLITES,
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ON PERITONEAL AND CIRCULATING
LEUCOCYTES OF MICE,
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CIRCULATING AND PERITONEAL
MONONUCLEAR CELLS OF MICE TO TOTAL-
BODY X IRRADIATION,
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PERSONNEL
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IRRADIATION,
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RADIATION UPON THE HEADS OF DOGS,
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(SINGLE-PULSED, MULTI-PULSED, ULTRA-
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LUMINESCENCE EFFICIENCY OF
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RESEARCH
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IN LEAVES AND AUTUMNAL EVENTS IN
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KIDNEYS OF GRID-IRRADIATED MICE,
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CELLS OF MICE TO IRRADIATION WITH
FISSION NEUTRONS,
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RADIATION THEORY TO CONSTANT DOSE
VARIABLE RADIATION TIME PROBLEMS IN
BIOLOGICAL SYSTEMS
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EFFECTIVENESS OF X-RAYS AT VERY
HIGH DOSE RATES,
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INJECTED WITH PASTEURELLA
TULARENSIS KILLED BY IONIZING
RADIATION,
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ALTERED RECUPERATIVE POTENTIAL IN
PREVIOUSLY IRRADIATED MICE,
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PENETRATION, FATE AND BIOLOGICAL
EFFECTS OF EXOGENOUS DNA INTO THE
CELLS OF IRRADIATED MAMMALIAN
TISSUES,
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PENETRATION AND FATE OF EXOGENOUS
DNA INTO CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES,
AD- 715 018
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DNA IN CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES,
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OF PROTONS TO 400 MEV.
AD- 673 584

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CHANGES IN CS137 RETENTION AND
ROUTES OF ELIMINATION AS EFFECTED
BY EXTERNAL FACTORS,
AD- 464 714

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MEASURING IRON METABOLISM IN
HEMATOPOIETIC CENTERS USING 59FE IN
THE PRESENCE OF SICR AND I251.
AD- 680 403

•LUTOMIRSKI, R. F.

INDUCED FIELDS AND HEATING WITHIN A
CRANIAL STRUCTURE IRRADIATED BY AN
ELECTROMAGNETIC PLANE WAVE,
AD- 720 589

•LUX, ROBERT

REDUCTION OF BIOLOGICAL
EFFECTIVENESS OF X-RAYS AT VERY
HIGH DOSE RATES,
AD- 713 557

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THE SEROLOGICAL SPECIFICITY OF
RADIATION ALTERED HUMAN SERUM GAMMA
GLOBULIN
AD- 275 973

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A STUDY OF BONE CHANGES IN ALBINO
RATS SUBJECTED TO LOW INTENSITY
COBALT-60 GAMMA RADIATION
AD- 283 327

•MACKAY, GAIL

'SANDWICH' SOLID PHASE
RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN
IMMUNOGLOBULINS,

AD- 695 597

•MAGDALENO, S. R.

AN EVALUATION OF POSSIBLE EFFECTS
OF 45 HZ, 60 HZ AND 75 HZ ELECTRIC
FIELDS ON NEUROPHYSIOLOGY AND
BEHAVIOR OF MONKEYS. PHASE I:
CONTINUOUS WAVE.
AD-AD08 404

•MAIR, WILLIAM

HISTOLOGY OF THE SURGICAL
RADIOESION IN THE HUMAN BRAIN AS
PRODUCED BY HIGH ENERGY PROTONS
AD- 284 931

•MAISIN, JEAN-RENE

PENETRATION AND FATE OF EXOGENOUS
DNA INTO CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 715 018

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CHARACTERISTICS OF PHYSIOLOGICAL
AND BIOCHEMICAL SHIFTS ASSOCIATED
WITH THE PROTRACTED ACTION OF SMALL
DOSES OF CO60 GAMMA-RAYS ON
ORGANISMS
AD- 299 499

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THE ALL-UNION CONFERENCE ON THE
APPLICATION OF RADIOELECTRONICS IN
BIOLOGY AND MEDICINE (2ND),
AD- 685 373

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EFFECTS OF EXTREMELY LOW FREQUENCY
ELECTROMAGNETIC FIELDS ON GROWTH
AND DIFFERENTIATION OF 'PHYSARUM
POLYCEPHALUM'.
AD-AD10 187

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PENETRATION AND FATE OF EXOGENOUS
DNA INTO CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 715 018

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CHROMOSOME ABNORMALITIES IN LIVER
AND MARROW OF MICE IRRADIATED WITH
FAST NEUTRONS, GAMMA-, AND X RAYS.
EFFECT OF DOSE RATE.
AD- 601 115

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CEREBRAL TEMPERATURE CHANGES IN THE
MONKEY (MACACA MULATTA) AFTER 2500
RADS IONIZING RADIATION,
AD-AD04 854

•MCCHALE, C. G.

ACTIVITY OF RAT LIVER ENZYMES
RESPONSIBLE FOR GLYCOGEN METABOLISM
AFTER WHOLE-BODY IRRADIATION,
AD- 705 996

•MCKNIGHT, WILLIAM B.

SOME EFFECTS OF NEODYMIUM LASER
RADIATION UPON THE HEADS OF DOGS,
AD- 648 204

•MCLAUGHLIN, MARY M.

LATE HISTOPATHOLOGICAL CHANGES IN
KIDNEYS OF GRID-IRRADIATED MICE,
AD- 652 941

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CHANGES IN CS137 RETENTION AND
ROUTES OF ELIMINATION AS EFFECTED
BY EXTERNAL FACTORS,
AD- 464 714

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AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.

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NEUROTRANSMITTERS IN MOUSE BRAIN.
AD-A016 459
- MICHAELSON, SOL M. . . .
BIOLOGIC EFFECTS OF MICROWAVE
EXPOSURE.
AD- 824 242
- MICHIE, RICHARD W. . . .
APPLICATIONS OF INTERMITTENT
RADIATION THEORY TO CONSTANT DOSE
VARIABLE RADIATION TIME PROBLEMS IN
BIOLOGICAL SYSTEMS
AD- 069 763
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POSTIRRADIATION VOMITING.
AD-A011 045
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EFFECT OF EXTREMELY LOW FREQUENCY
ELECTRIC AND MAGNETIC FIELDS ON
ROOTS OF 'VICIA FABAE'.
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- MILROY, WILLIAM C. . . .
EFFECTS OF EXTREMELY LOW FREQUENCY
ELECTRIC AND MAGNETIC FIELDS ON
ROOTS OF 'VICIA FABAE'.
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RADIATION.
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- THE EFFECTS OF HIGH POWER PULSED
AND LOW LEVEL CW MICROWAVE
RADIATION ON AN OPERANT BEHAVIOR IN
RATS.
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EARLY INCREASE IN THE MISCELL
DEOXYCYTIDINE POOL IN RATS AFTER X
IRRADIATION.
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TECHNIQUE AND MYELOGRAM FOR ADULT
BEAGLES.
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PROTON DEPTH-DOSE DOSIMETRY.
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CLEARING FACTOR LIPASE AND THE
IRRADIATION SYNDROME.
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- MORGAN, IRA L. . . .
PROTON DEPTH-DOSE DOSIMETRY.
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- MORONEY, WILLIAM F. . . .
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IRRADIATION ON THE ENZYMES OF BEEF
MUSCLE TISSUE.
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OF IRRADIATION--THE TIME FACTOR IN
IRRADIATION.
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AND 'RICKETTSIA AKARI' IN IRRADIATED
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EFFECTIVENESS OF X-RAYS AT VERY
HIGH DOSE RATES.
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ESTIMATE X-RAY AND GAMMA-RAY DOSE
TO MAN.
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AND MARROW OF MICE IRRADIATED WITH
FAST NEUTRONS, GAMMA-, AND X RAYS.
EFFECT OF DOSE RATE.
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TISSUES OF X-IRRADIATED MICE:
EFFECT OF DOSE AND OF LIMB-
SHIELDING.
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WITH PREDOMINANCE OF VEGETABLE
PRODUCTS SUBJECTED TO GAMMA-
IRRADIATION.
AD-A000 204

UNCLASSIFIED P-11 ZOM07

UNCLASSIFIED

OTT-PUL

- OTTOMAN, RICHARD E. . . .
USE OF CHROMOSOME ABERRATIONS TO
ESTIMATE X-RAY AND GAMMA-RAY DOSE
TO MAN.
AD- 666 713
- PARK, YOUNG H. . . .
DIURNAL VARIATION IN ORGANISMIC
RESPONSE TO VERY WEAK GAMMA
RADIATION.
AD- 647 936
- PARR, W. H. . . .
PRELIMINARY STUDIES ON THE
LUMINESCENCE EFFICIENCY OF
BIOLOGICAL COMPOUNDS.
AD- 806 313
- PARR, WORDIE H. . . .
CHANGES IN CS137 RETENTION AND
ROUTES OF ELIMINATION AS EFFECTED
BY EXTERNAL FACTORS.
AD- 464 714
- PEREZ, JUAN C. . . .
ION EFFECTS IN X-RAY DEPOLARIZATION
OF MUSCLE MEMBRANE
AD- 296 447
- CESIUM-SODIUM INTERACTIONS ON X-RAY
DEPOLARIZATION OF MUSCLE FIBERS
AD- 296 448
- PEREZ, JUAN CARLOS
RADIATION DAMAGE IN MUSCLE CELL
MEMBRANES AND REGULATION OF CELL
METABOLISM
AD- 296 449
- PETROVICH, I. K. . . .
THE BIOLOGICAL ACTION OF HIGH
ENERGY FAST NEUTRONS AND PROTONS.
AD- 433 529
- PFISTER, A. M. . . .
SPECIAL BIOPHYSICAL PROBLEMS IN
AEROSPACE MEDICINE. PART III.
AD- 744 594
- PHILLIPS, RICHARD D. . . .
AN ANALYSIS OF LOCAL AND SYSTEMIC
EFFECTS OF IONIZING RADIATION ON
BONE GROWTH.
AD- 623 641
- EFFECTS OF EXPOSURE TO PULSED
MICROWAVES (RADAR) ON CENTRAL
NERVOUS SYSTEM EXCITABILITY IN
LABORATORY ANIMALS.
AD- 786 753
- PHILLIPS, THEODORE L. . . .
THE INFLUENCE OF AET AND HYPOXIA ON
RECOVERY FROM RADIATION INJURY IN
MICE.
AD- 465 242
- SYSTEMIC FACTOR IN RECOVERY OF RAT
KIDNEY FROM X IRRADIATION:
THYMIDINE-H3 INCORPORATION STUDIES.
AD- 627 569
- AN ULTRASTRUCTURAL STUDY OF THE
DEVELOPMENT OF RADIATION INJURY IN
THE LUNG.
AD- 630 870
- PICKERING, JOHN E. . . .
RADIOBIOLOGICAL CONCEPTS FOR MANNED
SPACE MISSIONS.
AD- 714 124
- AIRCREW VULNERABILITY IN NUCLEAR
ENCOUNTERS.
AD- 783 772
- PIRUZYAN, L. A. . . .
EFFECT OF LASER BEAMS ON BIOLOGICAL
OBJECTS (VOZDEISTVIE LUCHET
KVANTOVOGO GENERATORA (LAZERA) NA
- BIOLOGICHESKIE OBEKTY).
AD- 752 699
- POLLACK, SIMEON
EFFECT OF HEMOLYSIS ON EXCRETION
AND ACCUMULATION OF IRON IN THE
RAT.
AD- 455 900
- THE ABSORPTION OF NONFERROUS METALS
IN IRON DEFICIENCY.
AD- 627 287
- POLOSUKHINA, T. Y. . . .
INFLUENCE OF X-RAY IRRADIATION ON
THE METABOLISM OF LIPIDES IN THE
LIVER OF A DOG
AD- 299 746
- PORTELA, ADOLFO
ION EFFECTS IN X-RAY DEPOLARIZATION
OF MUSCLE MEMBRANE
AD- 296 447
- CESIUM-SODIUM INTERACTIONS ON X-RAY
DEPOLARIZATION OF MUSCLE FIBERS
AD- 296 448
- RADIATION DAMAGE IN MUSCLE CELL
MEMBRANES AND REGULATION OF CELL
METABOLISM
AD- 296 449
- PROKOPENKO, L. G. . . .
IMMUNOLOGICAL PROPERTIES OF
DENATURATED SERUM PROTEINS IN
RABBITS SUBJECTED TO IONIZING
RADIATION
AD- 299 522
- PULLIAM, JAMES D. . . .
PATHOLOGICAL CHANGES IN RABBITS
INJECTED WITH PASTEURIZED
TULARENSIS KILLED BY IONIZING
RADIATION.
AD- 692 342

UNCLASSIFIED

RAN-SCH

- RANTANEN, NORMAN W. . . .
EFFECT OF REGIONAL SHIELDING AND
BACTERIAL ENDOCARDITIS IN X-
IRRADIATED RATS.
AD- 713 354
- REBA, RICHARD C. . . .
THE ABSORPTION OF NONFERROUS METALS
IN IRON DEFICIENCY,
AD- 627 287
- REFORMATSKI, I. A. . . .
MEANS OF INDIVIDUAL PROTECTION AND
CONTROL OF THE ACTION OF IONIZING
RADIATION,
AD-A008 267
- REGISTER, JAMES W., JR. . . .
THE EFFECTS OF IONIZING RADIATION
ON OXIDATION STATES OF BIOLOGICAL
SYSTEMS.
AD- 639 192
- REMY, JACQUES
PENETRATION AND FATE OF EXOGENOUS
DNA INTO CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 715 018
- RENO, VERNON R. . . .
SOME CONSIDERATIONS CONCERNING THE
USE OF MAGNETRON GENERATORS IN
MICROWAVE BIOLOGICAL RESEARCH.
AD-A013 329
- REVUSKY, SAMUEL H. . . .
SOME EFFECTS OF RUBY LASER
IRRADIATION ON RAT PERFORMANCE.
AD- 666 179
- REXED, BROR
HISTOLOGY OF THE SURGICAL
RADIOLESION IN THE HUMAN BRAIN AS
PRODUCED BY HIGH ENERGY PROTONS
AD- 284 931
- RIOCH, DAVID MCK. . . .
EFFECTS OF MICROWAVE IRRADIATION ON
EMBRYONIC BRAIN TISSUE.
AD-A004 024
- RODIONOV, V.M. . . .
BIOCHEMICAL MECHANISMS OF RADIATION
SICKNESS (AND) THE PROBLEM OF
SCIENTIFICALLY SUBSTANTIATING THE
DEGREE OF EPIDEMIOLOGICAL
EFFECTIVENESS OF VARIOUS VACCINES
AD- 298 314
- ROGOVIN, V. V. . . .
EFFECT OF LASER BEAMS ON BIOLOGICAL
OBJECTS (VOZDEISTVIE LUCHET
KVANTOVOGO GENERATORA (LAZERA) NA
BIOLOGICHESKIE OBJEKTY).
AD- 752 699
- ROSEN, V. J. . . .
THE INFLUENCE OF WHOLE-BODY
EXPOSURE TO X-RAYS OR NEUTRONS ON
THE LIFE SPAN DISTRIBUTION OF
TUMORS AMONG MALE RATS,
AD- 653 063
- ROSEN, V. J., JR. . . .
X-RAY INDUCED GLOMERULOSCLEROSIS IN
RATS: MODIFICATION OF LESION BY
FOOD RESTRICTION, UNINEPHRECTOMY,
AGE,
AD- 629 512
- RUBIN, L. B. . . .
UTILIZATION OF LASERS IN BIOLOGICAL
STUDIES (OB ISPOLZOVANII LAZEROV V
BIOLOGICHESKIH ISSLEDOVANIYAKH).
AD- 629 512
- RUPP, TED D. . . .
USAFSAM WHOLE BODY COUNTER SYSTEM
RADIOCHEMICAL DETERMINATION OF
THORIUM DIOXIDE.
AD- 764 741
- RYNELL, INGA
PATTERN RECOGNITION, SIMULATION,
AND DECISION-MAKING,
AD- 747 539
- SALMON, SYDNEY E. . . .
'SANDWICH' SOLID PHASE
RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN
IMMUNOGLOBULINS,
AD- 695 597
- SASAKI, MASAO S. . . .
USE OF CHROMOSOME ABERRATIONS TO
ESTIMATE X-RAY AND GAMMA-RAY DOSE
TO MAN.
AD- 666 713
- SAVCHENKO, G. S. . . .
EFFECT OF LASER BEAMS ON BIOLOGICAL
OBJECTS (VOZDEISTVIE LUCHET
KVANTOVOGO GENERATORA (LAZERA) NA
BIOLOGICHESKIE OBJEKTY),
AD- 752 699
- SCHADE, STANLEY G. . . .
EFFECT OF COBALT UPON IRON
ABSORPTION (34873).
AD- 714 326
- SCHAEFER, HERMANN J. . . .
FERRITIN PRODUCTION IN THE RAT
SMALL INTESTINE.
AD- 715 541
- SCHAEFER, HERMANN J. . . .
UNIFIED RANGE SPECTRUM AND LET

UNCLASSIFIED
P-13
ZOM07

SCH-STR

UNCLASSIFIED

- DISTRIBUTION FOR HZE PARTICLES OF GALACTIC RADIATION IN SPACE.
AD- 775 614
- SCHIROKI, L. L. . . .
DEVELOPMENTS IN RADIATION.
AD- 676 008
- SCHWAN, HERMAN P. . . .
EFFECTS OF MICROWAVES: LOCAL 'HOT SPOT' HEATING BY MICROWAVES.
AD-A001 558
- SEIGNEUR, L. J. . . .
ACUTE MORTALITY OF MICE AND RATS EXPOSED TO MIXED GAMMA-NEUTRON RADIATIONS OR TO X RAYS.
AD- 678 365
- SHAPIRO, A. R. . . .
INDUCED FIELDS AND HEATING WITHIN A CRANIAL STRUCTURE IRRADIATED BY AN ELECTROMAGNETIC PLANE WAVE.
AD- 720 589
- SIEGAL, ALAN M. . . .
EARLY EFFECTS OF 150-MEV PROTON IRRADIATION IN RHESUS MONKEYS.
AD- 681 465
- SIGDESTAD, CURTIS P. . . .
CORRELATION OF ANIMAL, CRYPT, AND STEM CELL SURVIVAL IN FISSION NEUTRON IRRADIATED MICE: A CHEMICAL PROTECTION STUDY.
AD-A014 065
- SIROTTINA, M.F. . . .
CHARACTERISTICS OF PHYSIOLOGICAL AND BIOCHEMICAL SHIFTS ASSOCIATED WITH THE PROTRACTED ACTION OF SMALL DOSES OF CO60 GAMMA-RAYS ON ORGANISMS
AD- 299 499
- SKIDMORE, W. D. . . .
BIOLOGICAL EFFECTS IN RODENTS EXPOSED TO PULSED ELECTROMAGNETIC RADIATION.
AD- 762 036
- SLINEY, DAVID H. . . .
INFRARED HEAT LAMPS USED IN DRYING CHEMICAL SAMPLES, SEPTEMBER-OCTOBER 1974.
AD-8000 673
- SMITH, J.C. . . .
MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY EXPOSURE
AD- 401 027
- SMITH, JANICE L. . . .
EFFECT OF IONIZING RADIATION ON ANIMALS AND PLANTS.
AD- 624 934
- SNYDER, SOLOMON M. . . .
THE EFFECT OF MICROWAVE IRRADIATION ON THE TURNOVER RATE OF SEROTONIN AND NOREPINEPHRINE AND THE EFFECT ON MONOAMINE METABOLIZING ENZYMES.
AD- 729 161
- SOURANDER, PATRICK . . .
HISTOLOGY OF THE SURGICAL RADIOLESION IN THE HUMAN BRAIN AS PRODUCED BY HIGH ENERGY PROTONS
AD- 284 931
- SPIEGEL, R. J. . . .
ELF COUPLING TO BIOSPHERES.
AD-A008 276
- SPRINZ, HELMUTH . . .
HISTOCHEMICAL INVESTIGATION OF THE MUCOSA OF THE EXTERIORIZED SMALL INTESTINE OF THE RAT EXPOSED TO X-RADIATION.
AD- 689 947
- SQUIRE, ROBERT A. . . .
INVESTIGATIONS OF THE PATHOLOGY OF INFECTIOUS DISEASES AND SUPPLEMENTARY CONSULTATION SERVICES.
AD- 707 488
- STANLEY, R. E. . . .
ACUTE MORTALITY OF MICE AND RATS EXPOSED TO MIXED GAMMA-NEUTRON RADIATIONS OR TO X RAYS.
AD- 678 365
- STOREY, WILLIAM H., JR. . . .
THE EFFECTS OF IONIZING RADIATION ON OXIDATION STATES OF BIOLOGICAL SYSTEMS.
AD- 639 192
- STOWELL, R. E. . . .
ORIENTATION OF EUCLENA BY RADIO-FREQUENCY FIELDS.
AD- 649 810
- STREL'TSOVA, V. N. . . .
THE BIOLOGICAL ACTION OF HIGH ENERGY FAST NEUTRONS AND PROTONS.
AD- 433 529
- STRIKE, T. A. . . .
ACUTE MORTALITY OF MICE AND RATS EXPOSED TO MIXED GAMMA-NEUTRON RADIATIONS OR TO X RAYS.
AD- 678 365
- RADIATION-RELEASED HISTAMINE IN THE RHESUS MONKEY AS MODIFIED BY NAST

UNCLASSIFIED P-14 ZOM07

UNCLASSIFIED

STR-VEO

- CELL DEPLETION AND ANTIHISTAMINE.
AD-4016 801
- STROMBERG, LAWYNE R.
HISTOCHEMICAL INVESTIGATION OF THE
MUCOSA OF THE EXTERIORIZED SMALL
INTESTINE OF THE RAT EXPOSED TO X-
RADIATION.
AD- 689 947
- STRONG, GUY M.
MEASURING IRON METABOLISM IN
HEMATOPOIETIC CENTERS USING ⁵⁹FE IN
THE PRESENCE OF SICR AND 125I.
AD- 680 403
- STUCK, BRUCE E.
OCULAR AND SKIN HAZARDS FROM CO2
LASER RADIATION.
AD- 785 609
- SWARTZ, MARQLO M.
LONG-LIVED ELECTRON SPIN RESONANCES
IN RATS IRRADIATED AT ROOM
TEMPERATURE.
AD- 618 175
- IN VIVO DOSIMETRY BY ELECTRON SPIN
RESONANCE SPECTROSCOPY.
AD- 672 621
- SWINGLE, KARL F.
EARLY INCREASE IN THE MISCIBLE
DEOXYCYTIDINE POOL IN RATS AFTER X
IRRADIATION.
AD- 680 611
- TARUSOV, B.M.
CHAIN REACTIONS IN THE DAMAGE OF
CELLS BY IONIZING RADIATION
AD- 299 598
- TAUYA, AKIRA
THE EFFECT OF COBALT-60 GAMMA
RADIATION ON THE CENTRAL NERVOUS
SYSTEM.
AD- 625 949
- THOMASSEN, ROBERT W.
EFFECTS OF TRIIODOTHYRONINE IN
ALTERING THE RESPONSE OF KIDNEYS TO
COBALT-60 RADIATION.
AD- 611 687
- THOMSON, R. A. E.
BIOLOGICAL EFFECTS OF MICROWAVE
EXPOSURE.
AD- 824 242
- TOROPTSEV, I. V.
MORPHOLOGICAL CHARACTERISTICS OF
THE BIOLOGICAL ACTION PRODUCED BY
MAGNETIC FIELDS (MORFOLOGICHESKAYA
KHARAKTERISTIKA BIOLOGICHESKOGO
DEISTVIYA MAGNITNYKH POLEI).
AD- 742 513
- TRABOULAY, ERIC A., JR
BIOLOGICAL EFFECTS OF NON-IONIZING
RADIATION.
AD-4013 315
- TRAYNOR, JOSEPH E.
EARLY EFFECTS OF 150-MEV PROTON
IRRADIATION IN RHESUS MONKEYS.
AD- 681 465
- TURBYFILL, C. L.
ELECTROCARDIOGRAPHY IN A RADIATION
ENVIRONMENT BY THE USE OF
TELEMETRY.
AD- 716 315
- TYAN, M. L.
REJECTION OF ALLOGENEIC SKIN GRAFTS
AND PRODUCTION OF ISOHEMAGGLUTININS
BY SENSITIZED MICE AFTER SUBLETHAL
IRRADIATION.
- AD- 466 883
- TYAN, MARVIN L.
ONTOGENY OF THE MOUSE IMMUNE
SYSTEM: IMMUNOGLOBULIN PRODUCING
CELLS.
AD- 671 806
- UPTON, A. C.
THE RADIOBIOLOGY OF THE CANCER
CELL.
AD- 647 752
- VAGNER, J. P.
SERIAL RIP MARROW ASPIRATION
TECHNIQUE AND MYELOGRAM FOR ADULT
BEAGLES.
AD- 721 699
- VALENCIA, V. I.
AFRI ELECTROMAGNETIC PULSE (FMP)
SIMULATOR.
AD- 770 113
- VALITOVA, M.S.
INFLUENCE OF X-RAY IRRADIATION ON
THE METABOLISM OF LIPIDES IN THE
LIVER OF A DOG
AD- 299 746
- VAN UMHERSEN, CLAIR A.
THE ACTION OF MICROWAVE RADIATION
ON THE EYE.
AD- 668 619
- VARMA, MAN M.
BIOLOGICAL EFFECTS OF NON-IONIZING
RADIATION.
AD-4013 315
- VEOMETT, ROBERT C.
USE OF CHROMOSOME ABERRATIONS TO
ESTIMATE X-RAY AND GAMMA-RAY DOSE

VER-WRI

UNCLASSIFIED

- TO MAN.
AD- 666 713
- VERRELLI, D. M. . . .
DOSIMETRY FOR NEUTRON RADIATION
STUDIES IN MINIATURE PIGS.
AD- 728 416
- VINOGRADOVA, R. P. . . .
EFFECT OF ADENOSINETRIPHOSPHORIC
ACID (ATP) ON THE METABOLISM OF
PHOSPHOPROTEINES IN THE LIVER AT
RADIATION INFLECTION.
AD- 614 962
- VITTORIO, P. V. . . .
THE EFFECT OF DAMAGE ON CELL
CONDUCTIVITY IN ELECTRONIC CELL
SIZE DISTRIBUTION.
AD- 627 877
- THE EFFECT OF RADIOPROTECTIVE
AGENTS ON ERYTHROPOIESIS IN
IRRADIATED MICE.
AD- 684 213
- THE EFFECT OF RADIOPROTECTIVE
AGENTS ON STEM CELL RECOVERY AFTER
IRRADIATION.
AD- 689 941
- VOSE, GEORGE P. . . .
A STUDY OF BONE CHANGES IN ALBINO
RATS SUBJECTED TO LOW INTENSITY
COBALT-60 GAMMA RADIATION
AD- 283 327
- WACHTEL, L. W. . . .
X-RAY INDUCED GLOMERULOSCLEROSIS IN
RATS: MODIFICATION OF LESION BY
FOOD RESTRICTION, UNINEPHRECTOMY,
AGE.
AD- 629 512
- WACHTEL, LOUIS W. . . .
- SYSTEMIC FACTOR IN RECOVERY OF RAT
KIDNEY FROM X IRRADIATION:
THYMIDINE-H3 INCORPORATION STUDIES.
AD- 627 589
- WALL, FRANCIS
BIOMETRICAL ANALYSIS OF BIOMEDICAL
RESPONSE DATA.
AD- 751 504
- WARSHAWSKY, A. S. . . .
THE CALCULATION OF ABSORBED DOSE
AND TISSUE TRANSMISSION FACTORS.
AD-AD12 684
- WATKINS, E. A. . . .
THE EFFECT OF RADIOPROTECTIVE
AGENTS ON ERYTHROPOIESIS IN
IRRADIATED MICE.
AD- 684 213
- WATTERS, C. . . .
PENETRATION AND FATE OF EXOGENOUS
DNA IN CELLS OF NORMAL AND
IRRADIATED MAMMALIAN TISSUES.
AD- 732 874
- WATTS, J. A. . . .
CEREBRAL TEMPERATURE CHANGES IN THE
MONKEY (MACACA MULATTA) AFTER 2500
RADS IONIZING RADIATION.
AD-AD04 854
- WEBB, S. J. . . .
BOUND WATER, INOSITOL, AND THE
EFFECT OF X-RAYS ON ESCHERICHIA
COLI.
AD- 618 263
- WEINTRAUB, LEWIS R. . . .
IRON EXCRETION BY THE SKIN.-59
SELECTIVE LOCALIZATION OF IRON-59
IN EPITHELIAL CELLS.
AD- 455 894
- WEISS, EMILIO
METABOLISM OF 'RICKETTSIA TYPHI'
AND 'RICKETTSIA AKARI' IN IRRADIATED
L CELLS.
AD- 750 448
- WEST, J. E. . . .
SERIAL RIB MARROW ASPIRATION
TECHNIQUE AND MYELOGRAM FOR ADULT
BEAGLES.
AD- 721 699
- WHEBY, MUNSEY S. . . .
STUDIES ON IRON ABSORPTION.
INTESTINAL REGULATORY MECHANISMS.
AD- 448 438
- CLEARANCE OF IRON FROM
HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO.
AD- 455 892
- WILLIAMS, GWILYM H. . . .
PROTON DEPTH-DOSE DOSIMETRY.
AD- 644 451
- WILLIS, J. A. . . .
- WOODWARD, KENT T. . . .
LATE HISTOPATHOLOGICAL CHANGES IN
KIDNEYS OF GRID-IRRADIATED MICE.
AD- 652 941
- WRIGHT, GEORGE G. . . .
PATHOLOGICAL CHANGES IN RABBIT'S
INJECTED WITH PASTEURELLA
TULARENSIS KILLED BY IONIZING
RADIATION.
AD- 692 342

UNCLASSIFIED

20M07

UNCLASSIFIED

WYA-7LA

WITH THE PROTRACTED ACTION OF SMALL
DOSES OF CO60 GAMMA-RAYS ON
ORGANISMS
AD- 800 499

•EVANT, D. E. . . .
BIOLOGICAL MEASUREMENTS IN RODENTS
EXPOSED CONTINUOUSLY THROUGHOUT
THEIR ADULT LIFE TO PULSED
ELECTROMAGNETIC RADIATION.
AD-A013 250

•YAM, KEI-MING . . .
EFFECTS OF X-IRRADIATION ON THE
HEXOBARBITAL METABOLIZING ENZYME
SYSTEM OF RAT LIVER MICROSOMES.
AD- 637 574

•YOUNG, D. R. . . .
SILVER-110M AND COBALT-60 IN
OCEANIC AND COASTAL ORGANISMS,
AD- 619 597

•YOUNG, R. . . .
POSTIRRADIATION VOMITING.
AD-A011 045

•YURA, M. T. . . .
INDUCED FIELDS AND HEATING WITHIN A
CRANIAL STRUCTURE IRRADIATED BY AN
ELECTROMAGNETIC PLANE WAVE.
AD- 720 589

•ZENO, JOSEPH R. . . .
DIURNAL VARIATION IN ORGANISMIC
RESPONSE TO VERY WEAK GAMMA
RADIATION.
AD- 647 936

•ZHOLKIVER, K. I. . . .
THE DISTRIBUTION OF DOSE IN TIME
DURING RADIATION THERAPY OF
MALIGNANT TUMORS.
AD- 749 763

•ZLATIN, R. S. . . .
CHARACTERISTICS OF PHYSIOLOGICAL
AND BIOCHEMICAL SHIFTS ASSOCIATED

UNCLASSIFIED P-17 ZOM07

UNCLASSIFIED

TITLE INDEX

THE ABSORPTION OF AD- 627 287
NONFERROUS METALS IN IRON
DEFICIENCY.(U)
•IRON

THE ACTION OF MICROWAVE AD- 668 619
RADIATION ON THE EYE.(U)
•RADIOBIOLOGY

ACTIVITY OF RAT LIVER AD- 705 996
ENZYMES RESPONSIBLE FOR GLYCOGEN
METABOLISM AFTER WHOLE-BODY
IRRADIATION.(U)
•RADIATION EFFECTS

ACUTE MORTALITY OF MICE AD- 678 365
AND RATS EXPOSED TO MIXED GAMMA-
NEUTRON RADIATIONS OR TO X RAYS.(U)
•RODENTS

ACUTE SOMATIC EFFECTS AD- 673 584
IN PRIMATES OF PROTONS TO 400
MEV.(U)
•PROTONS

AFRRI ELECTROMAGNETIC AD- 770 113
PULSE (EMP) SIMULATOR.(U)
•ELECTROMAGNETIC PULSES

AIRCREW VULNERABILITY AD- 783 772
IN NUCLEAR ENCOUNTERS.(U)
•NUCLEAR RADIATION

THE ALL-UNION AD- 685 373
CONFERENCE ON THE APPLICATION OF
RADIOELECTRONICS IN BIOLOGY AND
MEDICINE (2ND).(U)
•ELECTRONIC EQUIPMENT

ALTERED RECUPERATIVE AD- 451 879
POTENTIAL IN PREVIOUSLY IRRADIATED
MICE.(U)
•RADIATION INJURIES

AN ANALYSIS OF LOCAL AD- 623 641
AND SYSTEMIC EFFECTS OF IONIZING
RADIATION ON BONE GROWTH.(U)
•RADIATION EFFECTS

ANNUAL RESEARCH REPORT: AD- 766 796
1 JUL 1971-30 JUN 72.(U)

•RADIOBIOLOGY

ANNUAL RESEARCH REPORT: AD- 704 167
1 JULY 1968-30 JUNE 1969.(U)
•RADIOBIOLOGY

ANNUAL RESEARCH REPORT AD- 745 775
1 JULY 1970-30 JUNE 1971.(U)
•RADIOBIOLOGY

ANNUAL RESEARCH REPORT AD- 777 718
1 JULY 1972 - 30 JUNE 1973.(U)
•RADIOBIOLOGY

ANNUAL RESEARCH REPORT AD-A009 327
1 JULY 1973 -- 30 JUNE 1974.(U)
•RADIOBIOLOGY

ANNUAL RESEARCH REPORT AD-A023 119
1 JULY 1974-30 JUNE 1975.(U)
•RADIOBIOLOGY

ANNUAL RESEARCH REPORT AD-A041 524
1 JULY 1975 -- 30 SEPTEMBER
1976.(U)
•MEDICAL RESEARCH

ANTIBODY PLAQUE-FORMING AD- 653 864
CELLS IN UNSENSITIZED MICE;
SPECIFICITY AND RESPONSE TO
NEONATAL THYMECTOMY, X IRRADIATION
AND PHA.(U)
•ANTIGEN ANTIBODY REACTIONS

APPLICATION OF AD- 416 717
SEMICONDUCTOR RADIATION DETECTORS
TO RADIOLOGIC PROBLEMS.(U)
•SEMICONDUCTOR DEVICES

APPLICATIONS OF AD- 069 763
INTERMITTENT RADIATION THEORY TO
CONSTANT DOSE VARIABLE RADIATION
TIME PROBLEMS IN BIOLOGICAL
SYSTEMS(U)
•RADIOBIOLOGY

AROUSAL REACTIONS WITH AD- 421 070
A BRIEF PARTIAL-AND WHOLE-BODY X-
RAY EXPOSURE.(U)
•X RAYS

BIBLIOGRAPHY OF AD- 750 271
REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL
MANIFESTATIONS ATTRIBUTED TO
MICROWAVE AND RADIO-FREQUENCY
RADIATION.(U)
•ELECTROMAGNETIC RADIATION

BIBLIOGRAPHY OF AD- 770 621
REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL
MANIFESTATIONS ATTRIBUTED TO
MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 4.(U)
•ELECTROMAGNETIC RADIATION

BIBLIOGRAPHY OF AD- 784 007
REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL
MANIFESTATIONS ATTRIBUTED TO
MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 5.(U)
•ELECTROMAGNETIC RADIATION

BIBLIOGRAPHY OF AD-A015 622
REPORTED BIOLOGICAL PHENOMENA
(EFFECTS) AND CLINICAL
MANIFESTATIONS ATTRIBUTED TO
MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 6.(U)
•RADIOBIOLOGY

BIOCHEMICAL MECHANISMS AD- 298 314
OF RADIATION SICKNESS (AND) THE
PROBLEM OF SCIENTIFICALLY
SUBSTANTIATING THE DEGREE OF
EPIDEMIOLOGICAL EFFECTIVENESS OF
VARIOUS VACCINES(U)
•RADIOBIOLOGY

BIOLOGIC EFFECTS OF AD- 824 242
MICROWAVE EXPOSURE.(U)
•RADIATION HAZARDS

THE BIOLOGICAL ACTION AD- 433 529
OF HIGH ENERGY FAST NEUTRONS AND
PROTONS.(U)
•FAST NEUTRONS

BIOLOGICAL ACTION OF AD- 685 486
HIGH-ENERGY PROTONS, VOLUME 2.(U)

•PROTONS	CELLULAR RESPONSE TO RADIATION.(U)	AD- 668 686	GAMMA-, AND X RAYS. EFFECT OF DOSE RATE.(U)
BIOLOGICAL EFFECTS IN RODENTS EXPOSED TO PULSED ELECTROMAGNETIC RADIATION	•CELLS(BIOLOGY)		•CHROMOSOMES
•ELECTROMAGNETIC RADIATION	CEREBRAL TEMPERATURE CHANGES IN THE MONKEY (MACACA MULATTA) AFTER 2500 RADS IONIZING RADIATION.(U)	AD-AD04 854	CLEARANCE OF IRON FROM HEMOCHROMATOTIC AND NORMAL TRANSFERRIN IN VIVO, (U)
BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION - A	•RADIOBIOLOGY		•IRON
•ELECTROMAGNETIC RADIATION	BIOTOGRAHY.(U)		CLEARING FACTOR LIPASE AND THE IRRADIATION SYNDROME, (U)
BIOLOGICAL EFFECTS OF MICROWAVES.(U)	•ELECTROMAGNETIC RADIATION	AD- 296 448	•RADIATION EFFECTS
•MICROWAVES	INTERACTIONS ON X-RAY DEPOLARIZATION OF MUSCLE FIBERS(U)		CLONAL REPOPULATION IN RETICULAR TISSUES OF X-IRRADIATED MICE: EFFECT OF DOSE AND OF LINER SHIELDING.(U)
BIOLOGICAL EFFECTS OF NON-IONIZING RADIATION.(U)	•CESIUM COMPOUNDS		•RADIATION EFFECTS
•RADIATION EFFECTS	CHAIN REACTIONS IN THE DAMAGE OF CELLS BY IONIZING RADIATION(U)	AD- 299 598	COMPARATIVE EFFECTS OF 50 KVP AND 250 KVP X RAYS ON THE DOG(U)
BIOLOGICAL MEASUREMENTS IN RODENTS EXPOSED CONTINUOUSLY THROUGHOUT THEIR ADULT LIFE TO PULSED ELECTROMAGNETIC RADIATION.(U)	•RADIOBIOLOGY		•RADIOBIOLOGY
•ELECTROMAGNETIC RADIATION	CHANGES IN ACUTE RADIATION HAZARDS ASSOCIATED WITH CHANGES IN EXPOSURE GEOMETRY.(U)	AD- 708 812	COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL AND ECOLOGICAL RESEARCH REPORTS. VOLUME I.(U)
BIOMEDICAL ASPECTS OF NONIONIZING RADIATION.(U)	•RADIATION HAZARDS		•EXTREMELY LOW FREQUENCY
•MEETINGS	CHANGES IN CS137 RETENTION AND ROUTES OF ELIMINATION AS EFFECTED BY EXTERNAL FACTORS.(U)	AD- 464 714	COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL AND ECOLOGICAL RESEARCH REPORTS. VOLUME II.(U)
BIOMETRICAL ANALYSIS OF BIOMEDICAL RESPONSE DATA.(U)	•CESIUM		•EXTREMELY LOW FREQUENCY
•RADIATION DOSAGE	CHANGES IN THE TIGROID SUBSTANCE OF NEURONS UNDER THE EFFECT OF RADIO WAVES.(U)	AD- 649 460	CONTRIBUTIONS FROM THE ALPHA EMITTER, POLONIUM-210, TO THE NATURAL RADIATION ENVIRONMENT OF THE MARINE ORGANISMS.(U)
BIOPHYSICAL PROBLEMS IN AEROSPACE MEDICINE (PROBLEMS BIOPHYSIQUES PARTICULIERS DE LA MEDICINE AEROSPATIALE).(U)	•RADIOBIOLOGY		•RADIOACTIVE ISOTOPES
•AEROSPACE MEDICINE	CHARACTERISTICS OF PHYSIOLOGICAL AND BIOCHEMICAL SHIFTS ASSOCIATED WITH THE PROTRACTED ACTION OF SMALL DOSES OF CO60 GAMMA-RAYS ON ORGANISMS(U)	AD- 299 499	CORRELATION OF ANIMAL, CRYPT, AND STEM CELL SURVIVAL IN FISSION NEUTRON IRRADIATED MICE: A CHEMICAL PROTECTION STUDY.(U)
SOUND WATER, INOSITOL, AND THE EFFECT OF X-RAYS ON ESCHERICHIA COLI.(U)	•GAMMA RAYS		•RADIOPROTECTIVE AGENTS
•RADIATION EFFECTS	CHEMICAL RADIOPROTECTION OF HEMOPUIETIC COLONY-FORMING CELLS: COMPARATIVE EFFECT OF AET, AOXIA AND URETHAN.(U)	AD- 669 787	DEVELOPMENTS IN RADIATION.(U)
THE CALCULATION OF ABSORBED DOSE AND TISSUE TRANSMISSION FACTORS.(U)	•RADIOPROTECTIVE AGENTS		•RADIOBIOLOGY
•RADIATION EFFECTS	CHROMOSOME ABNORMALITIES IN LIVER AND MARROW OF MICE IRRADIATED WITH FAST NEUTRONS,	AD- 601 115	

UNCLASSIFIED

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DIFFERENTIAL AD- 632 282
SENSITIVITY OF CIRCULATING AND
PERITONEAL MONONUCLEAR CELLS OF
MICE TO TOTAL-BODY X
IRRADIATION, (U)
•LYMPHOCYTES

THE DISTRIBUTION OF AD- 749 763
DOSE IN TIME DURING RADIATION
THERAPY OF MALIGNANT TUMORS, (U)
•RADIOTHERAPY

DIURNAL VARIATION IN AD- 647 936
ORGANISMIC RESPONSE TO VERY WEAK
GAMMA RADIATION, (U)
•RADIOBIOLOGY

DOSIMETRY FOR NEUTRON AD- 728 416
RADIATION STUDIES IN MINIATURE
PIGS, (U)
•RADIOBIOLOGY

EARLY ALVEOLAR CELL AD- 671 054
MITOTIC ACTIVITY AND PULMONARY
TUMOR INCIDENCE IN URETHAN TREATED
X-IRRADIATED MICE, (U)
•CANCER

EARLY EFFECTS OF 150- AD- 681 465
KEV PROTON IRRADIATION IN RHESUS
MONKEYS, (U)
•RADIOBIOLOGY

EARLY INCREASE IN THE AD- 680 611
MISCIBLE DEOXYCYTIDINE POOL IN RATS
AFTER X IRRADIATION, (U)
•WHOLE BODY IRRADIATION

EFFECT OF 19 MHZ RF AD- 4016 459
RADIATION ON NEUROTRANSMITTERS IN
HOUSE BRAIN, (U)
•NEUROCHEMISTRY

EFFECT OF ADENOSINETRIPH AD- 614 962
OSPHORIC ACID (ATP) ON THE
METABOLISM OF PHOSPHOPROTEINES IN
THE LIVER AT RADIATION
INFLECTION, (U)
•RADIOBIOLOGY

THE EFFECT OF AD- 400 580

•COHERENT RADIATION

THE EFFECT OF MICROWAVE AD- 729 161
IRRADIATION ON THE TURNOVER RATE OF
SEROTONIN AND MOREPINEPRINE AND
THE EFFECT ON MONAMINE
METABOLIZING ENZYMES, (U)
•SEROTONIN

THE EFFECT OF AD- 629 865
MICROWAVES ON THE FUNCTIONAL STATE
OF NERVE, (U)
•RADIOBIOLOGY

THE EFFECT OF AD- 684 213
RADIOPROTECTIVE AGENTS ON
ERYTHROPOIESIS IN IRRADIATED
MICE, (U)
•RADIOPROTECTIVE AGENTS

THE EFFECT OF AD- 689 941
RADIOPROTECTIVE AGENTS ON STEM CELL
RECOVERY AFTER IRRADIATION, (U)
•HEMPOIETIC SYSTEM

EFFECT OF REGIONAL AD- 713 354
SHIELDING AND BACTERIAL
ENDOCARDITIS IN X-IRRADIATED
RATS, (U)
•X RAYS

EFFECT OF X RAYS AND AD- 689 096
60CO GAMMA RAYS ON THE LIVER ENZYME
SYSTEM RESPONSIBLE FOR FATTY ACID
SYNTHESIS, (U)
•ENZYMES

THE EFFECTS OF AD- 4022 462
ELECTROMAGNETIC FIELDS ON THE
NERVOUS SYSTEM, (U)
•NERVOUS SYSTEM

EFFECTS OF EXPOSURE TO AD- 786 753
PULSED MICROWAVES (RADAR) ON
CENTRAL NERVOUS SYSTEM EXCITABILITY
IN LABORATORY ANIMALS, (U)
•CENTRAL NERVOUS SYSTEM

EFFECTS OF EXTREMELY AD- 781 333
LOW FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICTA FARAR', (U)

CENTIMETER BAND RADIO WAVES ON THE
ABSORPTION OF AMINO ACIDS,
CHLORIDES AND WATER IN THE STOMACH
AND INTESTINES, (U)
•RADIOBIOLOGY

THE EFFECT OF COBALT-60 AD- 625 949
GAMMA RADIATION ON THE CENTRAL
NERVOUS SYSTEM, (U)
•CENTRAL NERVOUS SYSTEM

EFFECT OF COBALT UPON AD- 714 326
IRON ABSORPTION (34873), (U)
•IRON

THE EFFECT OF DAMAGE ON AD- 627 877
CELL CONDUCTIVITY IN ELECTRONIC
CELL SIZE DISTRIBUTION, (U)
•RADIATION EFFECTS

EFFECT OF EXTREMELY LOW AD- 767 387
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICTA FARAR', (U)
•PLANTS (BOTANY)

THE EFFECT OF EXTREMELY AD- 4005 898
LOW FREQUENCY RADIATION ON HUMAN
PERFORMANCE: A PRELIMINARY
STUDY, (U)
•HEALTH PHYSICS

EFFECT OF HEMOLYSIS ON AD- 455 900
EXCRETION AND ACCUMULATION OF IRON
IN THE RAT, (U)
•HEMOLYSIS

EFFECT OF IONIZING AD- 624 934
RADIATION ON ANIMALS AND PLANTS, (U)
•RADIOBIOLOGY

EFFECT OF IONIZING AD- 627 069
RADIATION ON THE HEART: REACTION OF
THE HEART IN NORMAL CONDITIONS TO
RADIATION, (U)
•HEART

EFFECT OF LASER BEAMS AD- 752 699
ON BIOLOGICAL OBJECTS (VOZDEISTVIE
LUCHEI KVANTOVOGO GENERATORA
(LAZERA) NA BIOLOGICHESKIE
OBJEKTY), (U)

T-3

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•ELECTROMAGNETIC FIELDS
EFFECTS OF EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELDS ON GROWTH AND DIFFERENTIATION OF 'PHYSARUM POLYCEPHALUM'.(U) AD-A010 187
•ELECTROMAGNETIC RADIATION
THE EFFECTS OF HIGH POWER PULSED AND LOW LEVEL CW MICROWAVE RADIATION ON AN OPERANT BEHAVIOR IN RATS.(U) AD-A004 943
•RADIOBIOLOGY
THE EFFECTS OF IONIZING RADIATION ON OXIDATION STATES OF BIOLOGICAL SYSTEMS.(U) AD-639 192
•RADIOBIOLOGY
THE EFFECTS OF LOCAL SUPRALETHAL IRRADIATION ON RENAL FUNCTION.(U) AD-A000 960
•RADIATION EFFECTS
EFFECTS OF MICROWAVE IRRADIATION ON EMBRYONIC BRAIN TISSUE.(U) AD-A004 024
•MICROWAVES
EFFECTS OF MICROWAVES: LOCAL 'HOT SPOT' HEATING BY MICROWAVES.(U) AD-A001 558
•RADIOBIOLOGY
EFFECTS OF RADIO-FREQUENCY IRRADIATION ON THE ENZYMES OF BEEF MUSCLE TISSUE.(U) AD-643 434
•ELECTROMAGNETIC RADIATION
EFFECTS OF TOTAL-BODY X IRRADIATION ON PERITONEAL AND CIRCULATING LEUCOCYTES OF MICE.(U) AD-630 103
•LEUCOCYTES
EFFECTS OF TRIIODOTHYRONINE IN ALTERING THE RESPONSE OF KIDNEYS TO COBALT-60 RADIATION.(U) AD-611 687
•KIDNEYS
EFFECTS OF X-IRRADIATION FACILITY FOR RADIOBIOLOGICAL RESEARCH.(U) AD-149 023
•RADIOBIOLOGY
HISTOCHEMICAL INVESTIGATION OF THE MUCOSA OF THE EXTERIORIZED SMALL INTESTINE OF THE RAT EXPOSED TO X-RADIATION.(U) AD-689 947
•INTESTINES
HISTOLOGY OF THE SURGICAL RADIOLESION IN THE HUMAN BRAIN AS PRODUCED BY HIGH ENERGY PROTONS.(U) AD-284 931
•BRAIN
HUMORAL ANTIBODY RESPONSES IN NEWBORN MONKEYS AFTER MIXED GAMMA-NEUTRON IRRADIATION.(U) AD-724 294
•RADIOBIOLOGY
HYGIENIC EVALUATION OF FOOD RATIONS WITH PREDOMINANCE OF VEGETABLE PRODUCTS SUBJECTED TO GAMMA-IRRADIATION.(U) AD-A000 204
•RADIATION EFFECTS
IMMUNOLOGICAL PROPERTIES OF DENATURATED SERUM PROTEINS IN RABBITS SUBJECTED TO IONIZING RADIATION.(U) AD-299 522
•RADIOBIOLOGY
IN VITRO MOTOR ACTIVITY OF RAT SMALL INTESTINE FOLLOWING WHOLE-BODY X IRRADIATION.(U) AD-697 662
•RADIATION EFFECTS
IN VIVO DOSIMETRY BY ELECTRON SPIN RESONANCE SPECTROSCOPY.(U) AD-672 621
•ELECTRON PARAMAGNETIC RESONANCE
INDUCED FIELDS AND HEATING WITHIN A CRANIAL STRUCTURE IRRADIATED BY AN ELECTROMAGNETIC PLANE WAVE.(U) AD-720 589
•BRAIN
INDUCTION OF HYMOGRAPHY AD-419 563

T-4
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UNCLASSIFIED

THE-PEN

TOLERANCE IN SUBLETHALLY X-IRRADIATED ADULT MICE.(U)
•RADIATION EFFECTS

THE INFLUENCE OF AET AD-465 242
AND HYPOXIA ON RECOVERY FROM RADIATION INJURY IN MICE.(U)
•RADIOBIOLOGY

THE INFLUENCE OF WHOLE-AD-653 063
BODY EXPOSURE TO X-RAYS OR NEUTRONS ON THE LIFE SPAN DISTRIBUTION OF TUMORS AMONG MALE RATS.(U)
•WHOLE BODY IRRADIATION

INFLUENCE OF X-AD-601 792
IRRADIATION ON DEVELOPMENT OF MICROSOXIDE AND REDUCTASE ACTIVITY IN THE LIVERS OF YOUNG MALE RATS.(U)
•RADIATION EFFECTS

INFLUENCE OF X-RAY AD-299 746
IRRADIATION ON THE METABOLISM OF LIPIDS IN THE LIVER OF A DOG(U)
•LIPIDS

INFRARED HEAT LAMPS AD-8000 673
USED IN DRYING CHEMICAL SAMPLES, SEPTEMBER-OCTOBER 1974.(U)
•EYE

INVESTIGATIONS OF THE AD-707 468
PATHOLOGY OF INFECTIOUS DISEASES AND SUPPLEMENTARY CONSULTATION SERVICES.(U)
•MYCOBACTERIUM TUBERCULOSIS

ION EFFECTS IN X-RAY AD-296 447
DEPOLARIZATION OF MUSCLE MEMBRANE(U)
•MUSCLES

IRON EXCRETION BY THE AD-455 894
SKIN. SELECTIVE LOCALIZATION OF IRON-59 IN EPITHELIAL CELLS.(U)
•IRON

LATE HISTOPATHOLOGICAL AD-652 941
CHANGES IN KIDNEYS OF GRID-IRRADIATED MICE.(U)

•RADIO THERAPY

LOCALIZED RADIOLESIONS AD-648 028
IN THE CENTRAL NERVOUS SYSTEM.
BIBLIOGRAPHY.(U)
•RADIOBIOLOGY

LONG-LIVED ELECTRON AD-618 178
SPIN RESONANCES IN RATS IRRADIATED AT ROOM TEMPERATURE.(U)
•RADIOBIOLOGY

MEANS OF INDIVIDUAL AD-AD08 267
PROTECTION AND CONTROL OF THE ACTION OF IONIZING RADIATION.(U)
•HEALTH PHYSICS

MEASURING IRON AD-680 403
METABOLISM IN HEMATOPOIETIC CENTERS USING 59FE IN THE PRESENCE OF 51CR AND 125I.(U)
•IRON

MEDICAL RADIOLOGY, AD-400 405
1962, VOL. 7, NO. 8: (SELECTED)
ARTICLES(U)
•MEDICAL RESEARCH

MEDICAL RADIOLOGY, AD-405 421
1962, VOL. 7, NO. 11: (SELECTED)
ARTICLES.(U)
•RADIOBIOLOGY

MEDICAL RADIOLOGY, AD-610 300
1964, VOL. 9, NO. 3: SELECTED
ARTICLES.(U)
•RADIOBIOLOGY

MEDICINE AND PHYSIOLOGY AD-403 741
SELECTED ARTICLES.(U)
•MEDICINE

METABOLISM OF AD-750 448
•RICKETTSIA TYPHI AND RICKETTSIA AKARI IN IRRADIATED L CELLS.(U)
•RICKETTSIA TYPHI

MORPHOLOGICAL AD-742 513
CHARACTERISTICS OF THE BIOLOGICAL ACTION PRODUCED BY MAGNETIC FIELDS (MORFOLOGICHESKAYA KHA RAKTERISTIKA

BIOLOGICHESKOGO DEISTVIYA MAGNITNYKH POLEI).(U)
•ELECTROMAGNETIC FIELDS

MOTOR RESPONSES IN AD-401 027
MOTHS TO LOW INTENSITY X-RAY EXPOSURE(U)
•INSECTS

NAVY SPONSORED ELF AD-AD27 061
BIOLOGICAL AND ECOLOGICAL RESEARCH SUMMARY (UPDATE).(U)
•ELECTROMAGNETIC RADIATION

NEUTRONS IN AD-691 153
RADIOBIOLOGICAL EXPERIMENTS.(U)
•NEUTRONS

OCULAR AND SKIN HAZARDS AD-785 609
FROM CO2 LASER RADIATION.(U)
•CARBON DIOXIDE LASERS

ONTOGENY OF THE MOUSE AD-671 806
IMMUNE SYSTEM: IMMUNOGLOBULIN PRODUCING CELLS.(U)
•EMBRYOS

OPERANT BEHAVIOR AND AD-AD43 706
COLONIC TEMPERATURE OF SQUIRREL MONKEYS (SAI MARI SCIUREUS) DURING MICROWAVE IRRADIATION.(U)
•MICROWAVES

ORIENTATION OF EUGLENA AD-649 810
BY RADIO-FREQUENCY FIELDS.(U)
•RADIOBIOLOGY

PATHOLOGICAL CHANGES IN AD-692 342
RABBITS INJECTED WITH PASTEURELLA TULARENSIS KILLED BY IONIZING RADIATION.(U)
•PASTEURELLA TULARENSIS

PATTERN RECOGNITION, AD-747 539
SIMULATION, AND DECISION-MAKING.(U)
•PATTERN RECOGNITION

PENETRATION AND FATE OF AD-732 874
EXOGENOUS DNA IN CELLS OF NORMAL AND IRRADIATED MAMMALIAN TISSUES.(U)

T-5

UNCLASSIFIED

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•DEOXYRIBONUCLEIC ACIDS			
PENETRATION AND FATE OF EXOGENOUS DNA INTO CELLS OF NORMAL AND IRRADIATED MAMMALIAN TISSUES.(U)	AD- 715 018		
•RADIOBIOLOGY			
PENETRATION, FATE AND BIOLOGICAL EFFECTS OF EXOGENOUS DNA INTO THE CELLS OF IRRADIATED MAMMALIAN TISSUES.(U)	AD- 762 202		
•DEOXYRIBONUCLEIC ACIDS			
PHARMACOLOGICAL STUDIES ON IRRADIATED ANIMALS. PART I. SCOPE AND METHODOLOGY.(U)	AD- 491 993		
•PHARMACOLOGY			
PHYSICAL AND RADIOBIOLOGICAL INVESTIGATIONS ON ARTIFICIAL EARTH SATELLITES.(U)	AD- 756 771		
•COSMIC RAYS			
PLUTONIUM-239. ITS DISTRIBUTION, BIOLOGICAL EFFECT AND ACCELERATED ELIMINATION. (PLUTONIUM 239 RASPREDELENIYE, BIOLOGICHESKOYE DEYSTVIE, USKORENIVYE VYVEDENIYA).(U)	AD- 430 440		
•PLUTONIUM			
POSTIRRADIATION VOMITING.(U)	AD-AD11 045		
•RADIATION EFFECTS			
PRELIMINARY STUDIES ON THE LUMINESCENCE EFFICIENCY OF BIOLOGICAL COMPOUNDS.(U)	AD- 806 313		
•RADIOBIOLOGY			
PRIMARY AND INITIAL PROCESSES IN THE BIOLOGICAL EFFECTS OF RADIATION (SELECTED ARTICLES).(U)	AD- 611 045		
•RADIOBIOLOGY			
PRIMATE PHYSICAL ACTIVITY FOLLOWING EXPOSURE TO A SINGLE 2000-RAD PULSED DOSE OF MIXED GAMMA-NEUTRON RADIATION.(U)	AD-AD11 044		
•RADIATION EFFECTS			
PROCEEDING OF INVITED PAPERS SHIELDING AND DOSIMETRY DIVISION AMERICAN NUCLEAR SOCIETY HELD AT WASHINGTON, D. C., NOVEMBER 1968.(U)	AD- 712 532		
•FAST REACTORS			
PROCEEDINGS OF THE SCIENTIFIC-TECHNICAL CONFERENCE ON THE USE OF IONIZING RADIATION IN THE NATIONAL ECONOMY. ISSUE 3.(U)	AD- 786 807		
•MEETINGS			
PROTECTIVE EFFECT OF AN ELEMENTAL DIET ON RADIATION ENTEROPATHY IN THE MOUSE.(U)	AD- 782 595		
•DIET			
PROTON DEPTH-DOSE DOSIMETRY.(U)	AD- 644 451		
•RADIATION HAZARDS			
PULSED IRRADIATION TECHNIQUES (SINGLE-PULSED, MULTI-PULSED, ULTRA-PULSED) AS A NEW APPROACH TO RADIOBIOLOGICAL PROBLEMS(U)	AD- 265 378		
•IONIZATION			
RADIATION DAMAGE IN MUSCLE CELL MEMBRANES AND REGULATION OF CELL METABOLISM(U)	AD- 296 449		
•METABOLISM			
RADIATION HAZARDS.(U)	AD-AD15 200		
•RADIATION HAZARDS			
RADIATION-INDUCED PREMATURE AGING IN LEAVES AND AUTUMNAL EVENTS IN NATURE.(U)	AD- 627 292		
•RADIOBIOLOGY			
RADIATION-RELEASED HISTAMINE IN THE RHESUS MONKEY AS MODIFIED BY FAST CELL DEPLETION AND ANTIMISTAMINE.(U)	AD-AD16 801		
•RADIOBIOLOGY			
RADIOBIOLOGICAL	AD- 714 124		
CONCEPTS FOR MANNED SPACE MISSIONS.(U)			
•RADIATION DOSAGE			
RADIOBIOLOGY IN THE USSR: UTILIZATION OF RADIATION AND RADIOISOTOPES IN BIOLOGY AND MEDICINE IN THE USSR.(U)	AD- 483 344		
•RADIOBIOLOGY			
RADIOBIOLOGY OF LARGE ANIMALS.(U)	AD- 770 131		
•RADIOBIOLOGY			
RADIOBIOLOGY OF LARGE ANIMALS.(U)	AD-AD15 187		
•RADIOBIOLOGY			
THE RADIOBIOLOGY OF TEETH(U)	AD- 285 094		
•RADIOBIOLOGY			
THE RADIOBIOLOGY OF THE CANCER CELL.(U)	AD- 647 752		
•CANCER			
RADIOBIOLOGY (SELECTED ARTICLES)(U)	AD- 294 513		
•BRAIN			
RADIOBIOLOGY (SELECTED CHAPTERS)(U)	AD- 295 807		
•RADIATION EFFECTS			
RADIOBIOLOGY: THE RADIATION INJURY MECHANISM IN MOUSE OVARIES AND ELECTRICAL STIMULATION OF THE HEART BY MEANS OF RADIOFREQUENCY IMPULSES TRANSMISSION.(U)	AD- 402 519		
•RADIOBIOLOGY			
REDUCTION AND ALKYLATION OF IMMUNOGLOBULINS FROM NORMAL, IRRADIATED AND SPLENECTOMIZED RABBITS.(U)	AD- 669 144		
•GAMMA GLOBULIN			
REDUCTION OF BIOLOGICAL EFFECTIVENESS OF X-RAYS AT VERY HIGH DOSE RATES.(U)	AD- 713 557		

T-6

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REF-UT1

- RADIATION EFFECTS
- REJECTION OF ALLOGENEIC AD- 466 883
 - SKIN GRAFTS AND PRODUCTION OF
 - ISOHEMAGGLUTININS BY SENSITIZED
 - MICE AFTER SUBLETHAL
 - IRRADIATION.(U)
- TRANSPLANTATION
- RELATIVE BIOLOGICAL AD- 714 421
 - EFFECTIVENESS OF IRRADIATION--THE
 - TIME FACTOR IN IRRADIATION.(U)
- RADIATION EFFECTS
- REPORT ON THE AD- 783 992
 - INTERNATIONAL SEMINAR ON RADIATION
 - PROTECTION, ENVIRONMENT AND
 - POPULATION (IST) HELD IN POTSDAM ON
 - 16-21 OCT 72.(U)
- MEETINGS
- REPORTS OF THE ACADEMY AD- 400 217
 - OF SCIENCES USSR, 1962, VOL. 145,
 - NO. 1: SELECTED ARTICLES(U)
- PHOTOSYNTHESIS
- THE RESPONSE OF AD- 640 316
 - ERYTHROPOIETIC STEM CELLS OF MICE
 - TO IRRADIATION WITH FISSION
 - NEUTRONS.(U)
- FISSION NEUTRONS
- SANDWICH' SOLID PHASE AD- 695 597
 - RADIOIMMUNOASSAY FOR THE
 - QUANTITATIVE DETERMINATION OF HUMAN
 - IMMUNOGLOBULINS.(U)
- GAMMA GLOBULIN
- SANGUINE SYSTEM AD- 759 049
 - BIOLOGICAL/ECOLOGICAL RESEARCH
 - PROGRAM.(U)
- ELECTROMAGNETIC RADIATION
- SEMINAR ON CELL AND AD- 720 601
 - CELL SYSTEM ECOLOGY, HELD IN PARIS,
 - (FRANCE), 13-15 JUNE 1969.(U)
- CELLS(BIOLOGY)
- SERIAL RIB MARROW AD- 721 699
 - ASPIRATION TECHNIQUE AND MYELOGRAM
 - FOR ADULT BEAGLES.(U)
- BONE MARROW
- THE SEROLOGICAL AD- 275 973
 - SPECIFICITY OF RADIATION ALTERED
 - HUMAN SERUM GAMMA GLOBULIN(U)
- RADIOBIOLOGY
- SILVER-110M AND COBALT- AD- 619 597
 - 60 IN ORGANIC AND COASTAL
 - ORGANISMS.(U)
- AQUATIC ANIMALS
- SOME CONSIDERATIONS AD-4013 329
 - CONCERNING THE USE OF MAGNETRON
 - GENERATORS IN MICROWAVE BIOLOGICAL
 - RESEARCH.(U)
- MICROWAVE TUBES
- SOME EFFECTS OF AD- 648 204
 - NEODYMIUM LASER RADIATION UPON THE
 - HEADS OF DOGS.(U)
- LASERS
- SOME EFFECTS OF RUBY AD- 666 179
 - LASER IRRADIATION ON RAT
 - PERFORMANCE.(U)
- RADIOBIOLOGY
- SOVIET RADIOBIOLOGY.(U) AD- 671 436
 - RADIOBIOLOGY
- SOVIET RESEARCH ON THE AD- 645 979
 - NEURAL EFFECTS OF MICROWAVES.(U)
- RADIOBIOLOGY
- SPECIAL BIOPHYSICAL AD- 744 594
 - PROBLEMS IN AEROSPACE MEDICINE.
 - PART III.(U)
- RADIOBIOLOGY
- STUDIES ON IRON AD- 448 438
 - ABSORPTION, INTESTINAL REGULATORY
 - MECHANISMS.(U)
- METABOLISM
- A STUDY OF BONE CHANGES AD- 283 327
 - IN ALBINO RATS SUBJECTED TO LOW
 - INTENSITY COBALT-60 GAMMA
 - RADIATION(U)
- BONES
- SYNERGISM OF THYMUS AND AD- 713 321
 - BONE MARROW IN THE PRODUCTION OF
 - GRAFT-VERSUS-HOST SPLENOHEGALY IN X-
 - IRRADIATED HOSTS.(U)
- BONE MARROW
- SYSTEMIC FACTOR IN AD- 627 569
 - RECOVERY OF RAT KIDNEY FROM X
 - IRRADIATION: THYMIDINE-M3
 - INCORPORATION STUDIES.(U)
- KIDNEYS
- TRAINING OF MEDICAL AD- 400 203
 - RADIOLOGY PERSONNEL(U)
- MEDICAL PERSONNEL
- TUMOR MICROVASCULATURE AD-4013 053
 - FOLLOWING FRACTIONATED X
 - IRRADIATION.(U)
- RADIOBIOLOGY
- AN ULTRASTRUCTURAL AD- 630 870
 - STUDY OF THE DEVELOPMENT OF
 - RADIATION INJURY IN THE LUNG.(U)
- LUNG
- UNIFIED RANGE SPECTRUM AD- 775 614
 - AND LET DISTRIBUTION FOR H7E
 - PARTICLES OF GALACTIC RADIATION IN
 - SPACE.(U)
- SPACE ENVIRONMENTS
- URETHAN-INDUCED LUNG AD- 623 079
 - TUMORS IN MICE: X-RADIATION DOSE
 - DEPENDENT INHIBITION.(U)
- RADIATION EFFECTS
- USAPSM WHOLE BODY AD- 764 741
 - COUNTER SYSTEM RADIOCHEMICAL
 - DETERMINATION OF THORIUM
 - DIOXIDE.(U)
- THORIUM COMPOUNDS
- USE OF CHROMOSOME AD- 666 713
 - ABERRATIONS TO ESTIMATE X-RAY AND
 - GAMMA-RAY DOSE TO MAN.(U)
- RADIOBIOLOGY
- UTILIZATION OF LASERS AD- 726 557
 - IN BIOLOGICAL STUDIES (OB
 - ISPOLZOVANI LAZEROV V

T-7

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BIOLOGICHESKIH ISSLEDOVANIYAKH), (U)
•RADIOBIOLOGY

X-RAY INDUCED
AD- 629 512
GLOMERULOSCLEROSIS IN RATS:
MODIFICATION OF LESION BY FOOD
RESTRICTION, UNINEPHRECTOMY,

AGE: (U)

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AD-A015 200

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RAYS ON THE LIVER ENZYME SYSTEM
RESPONSIBLE FOR FATTY ACID
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NAHRL-1236 . . .
OPERANT BEHAVIOR AND COLONIC
TEMPERATURE OF SQUIRREL MONKEYS
(SAIMIRI SCIUREUS) DURING MICROWAVE
IRRADIATION.
AD-A043 706 . . .
NAVAL ELECTRONIC SYSTEMS COMMAND
WASHINGTON D C . . .
SANGUINE SYSTEM . . .
BIOLOGICAL/ECOLOGICAL RESEARCH
PROGRAM.
AD- 759 049 . . .
NAVY SPONSORED ELF BIOLOGICAL
AND ECOLOGICAL RESEARCH SUMMARY
(UPDATE).
AD-A027 061 . . .
NAVAL INTELLIGENCE SUPPORT CENTER
WASHINGTON D C TRANSLATION SERVICES
DIV . . .
NISC-TRANS-3367 . . .
EFFECT OF LASER BEAMS ON
BIOLOGICAL OBJECTS (VOZDEISTVIE
LUCHEI KVANTOVOGO GENERATORA
[LAZERA] NA BIOLOGICHESKIE OBEKTY),
AD- 752 699 . . .
- NAVAL MEDICAL RESEARCH AND
DEVELOPMENT COMMAND BETHESDA MD . . .
BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA (EFFECTS) AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 5.
AD- 784 007 . . .
BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA (EFFECTS) AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 6.
AD-A015 622 . . .
NAVAL MEDICAL RESEARCH AND
DEVELOPMENT COMMAND BETHESDA MD
ELECTROMAGNETIC RADIATION PROJECT
OFFICE . . .
EMPRO-2-VOL-1 . . .
COMPILATION OF NAVY SPONSORED
ELF BIOMEDICAL AND ECOLOGICAL
RESEARCH REPORTS. VOLUME 1.
AD-A015 068 . . .
EMPRO-2-VOL-2 . . .
COMPILATION OF NAVY SPONSORED
ELF BIOMEDICAL AND ECOLOGICAL
RESEARCH REPORTS. VOLUME 11.
AD-A015 069 . . .
NAVAL MEDICAL RESEARCH INST BETHESDA
MD . . .
PHARMACOLOGICAL STUDIES ON
IRRADIATED ANIMALS. PART 1. SCOPE
AND METHODOLOGY.
(NAVMEC-NM-006-012.05.04)
AD- 491 993 . . .
SYNERGISM OF THYMUS AND BONE
MARROW IN THE PRODUCTION OF GRAFT-
VERSUS-HOST SPLENOMEGALY IN X-
IRRADIATED HOSTS.
(NAVMEC-MR005.02-0013A-2)
AD- 713 321 . . .
AN EXAMINATION OF REGENERATING

UNCLASSIFIED 0-7 ZOM07

UNCLASSIFIED

NAV-NAV

AD- 722 324
HEPATIC TISSUE FOLLOWING IN VIVO EXPOSURE TO R. F. RADIATION.

AD- 750 271
BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA ('EFFECTS') AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION.

AD- 750 448
METABOLISM OF 'RICKETTSIA TYPHI' AND RICKETTSIA AKARI' IN IRRADIATED L CELLS.

AD- 770 621
BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA ('EFFECTS') AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 4.

AD- 400 635
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AD- 285 094
THE RADIOBIOLOGY OF TEETH

AD- 400 635
COMPARATIVE EFFECTS OF 50 KVP AND 250 KVP X RAYS ON THE DOG

AD- 401 027
MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY EXPOSURE

AD- 651 879
USNRDL-TR-67-35
ALTERED RECUPERATIVE POTENTIAL IN PREVIOUSLY IRRADIATED MICE. (NAVHED-MR005-08-0017)

AD- 419 563
USNRDL-TR-67-36
THE INFLUENCE OF WHOLE-BODY EXPOSURE TO X-RAYS OR NEUTRONS ON THE LIFE SPAN DISTRIBUTION OF

AD- 653 063
TUMORS AMONG MALE RATS. (NAVHED-MR005-08-0018)

AD- 653 864
USNRDL-TR-67-79
ANTIBODY PLAQUE-FORMING CELLS IN UNSENSITIZED MICE: SPECIFICITY AND RESPONSE TO NEONATAL THYMECTOMY, X IRRADIATION AND PHA. (NAVHED-MR005-08-0006)

AD- 657 609
USNRDL-TR-67-79
CLONAL REPOPULATION IN RETICULAR TISSUES OF X-IRRADIATED MICE: EFFECT OF DOSE AND OF LIMB-SHIELDING.

AD- 669 787
USNRDL-TR-68-44
CHEMICAL RADIOPROTECTION OF HERPOPETIC COLONY-FORMING CELLS: COMPARATIVE EFFECT OF AET, ANOXIA AND URETHAN.

AD- 671 054
USNRDL-TR-68-51
EARLY ALVEOLAR CELL MITOTIC ACTIVITY AND PULMONARY TUMOR INCIDENCE IN URETHAN TREATED X-IRRADIATED MICE.

AD- 671 806
USNRDL-TR-68-57
ONTOGENY OF THE MOUSE IMMUNE SYSTEM: IMMUNOGLOBULIN PRODUCING CELLS.

AD- 680 611
USNRDL-TR-68-138
EARLY INCREASE IN THE MISCIBLE DEOXYCYTIDINE POOL IN RATS AFTER X IRRADIATION.

AD- 419 563
USNRDL-TR-68-8
INDUCTION OF HOMOGRAFT TOLERANCE IN SUBLETHALLY X-IRRADIATED ADULT MICE.

AD- 421 070
USNRDL-TR-670
AROUSAL REACTIONS WITH A BRIEF PARTIAL-AND WHOLE-BODY X-RAY EXPOSURE.

AD- 465 242
USNRDL-TR-740
CHROMOSOME ABNORMALITIES IN LIVER AND MARROW OF MICE IRRADIATED WITH FAST NEUTRONS, GAMMA-, AND X RAYS. EFFECT OF DOSE RATE.

AD- 465 242
USNRDL-TR-851
THE INFLUENCE OF AET AND HYPOXIA ON RECOVERY FROM RADIATION INJURY IN MICE. (NAVHED-MR005-08-5201)

AD- 466 883
USNRDL-TR-857
REJECTION OF ALLOGENEIC SKIN GRAFTS AND PRODUCTION OF ISCHEMAGGLUTININS BY SENSITIZED MICE AFTER SUBLETHAL IRRADIATION.

AD- 623 641
USNRDL-TR-898
AN ANALYSIS OF LOCAL AND SYSTEMIC EFFECTS OF IONIZING RADIATION ON BONE GROWTH. (NAVHED-MR005-08-5201-2)

AD- 623 079
USNRDL-TR-911
URETHAN-INDUCED LUNG TUMORS IN MICE: X-RADIATION DOSE DEPENDENT INHIBITION. (NAVHED-MR005-08-1200)

AD- 627 569
USNRDL-TR-945
SYSTEMIC FACTOR IN RECOVERY OF RAT KIDNEY FROM X IRRADIATION: THYMIDINE-M3 INCORPORATION STUDIES. (NAVHED-MR005-08-1200-7)

AD- 627 569
USNRDL-TR-966
EFFECTS OF TOTAL-BODY X IRRADIATION ON PERITONEAL AND

UNCLASSIFIED ZOM07

UNCLASSIFIED

NAV-SCH

CIRCULATING LEUCOCYTES OF MICE,
(NAVHED-MR005-08-1200-4)
AD- 630 103

USNRDL-TR-973
AN ULTRASTRUCTURAL STUDY OF THE
DEVELOPMENT OF RADIATION INJURY IN
THE LUNG.
(NAVHED-MR005-08-5201)
AD- 630 870

USNRDL-TR-977
X-RAY INDUCED
GLOMERULOSCLEROSIS IN RATS:
MODIFICATION OF LESION BY FOOD
RESTRICTION, UNINEPHRECTOMY, AGE,
(NAVHED-MR005-08-1200-7)
AD- 629 512

USNRDL-TR-999
DIFFERENTIAL SENSITIVITY OF
CIRCULATING AND PERITONEAL
MONONUCLEAR CELLS OF MICE TO TOTAL-
BODY X IRRADIATION,
(NAVHED-MR005-08-1200-4)
AD- 632 282

USNRDL-TR-1059
THE RESPONSE OF ERYTHROPOIETIC
STEM CELLS OF MICE TO IRRADIATION
WITH FISSION NEUTRONS,
(NAVHED-MR005-08-0009)
AD- 640 316

NAVAL SURFACE WEAPONS CENTER DAHLGREN
LAB VA
NSWC/DL-TR-3230
THE EFFECTS OF HIGH POWER
PULSED AND LOW LEVEL CW MICROWAVE
RADIATION ON AN OPERANT BEHAVIOR IN
RATS.
AD-A004 943

NAVAL WEAPONS LAB DAHLGREN VA
NWL-TR-3110
BIOMEDICAL ASPECTS OF
IONIZING RADIATION.
AD- 780 222

NORTHROP CORPORATE LABS HAWTHORNE
CALIF LIFE SCIENCES LABS
FLUOROMETRIC DETECTION OF
BIOLOGIC CHANGES IN IRRADIATED
LABORATORY ANIMALS.
(SAM-TR-68-43)
AD- 672 819

NORTHWESTERN UNIV EVANSTON ILL DEPT
OF BIOLOGICAL SCIENCES
DIURNAL VARIATION IN ORGANISMIC
RESPONSE TO VERY WEAK GAMMA
RADIATION.
AD- 647 936

OAK RIDGE NATIONAL LAB TENN
THE RADIOBIOLOGY OF THE CANCER
CELL,
(SAM-59-22)
AD- 647 752

OFFICE OF CIVIL DEFENSE WASHINGTON D
C
OCD-3146A
CELLULAR RESPONSE TO RADIATION.
AD- 668 686

PENNSYLVANIA UNIV PHILADELPHIA
EFFECTS OF MICROWAVES: LOCAL
'HOT SPOT' HEATING BY MICROWAVES.
AD-A001 558

RAND CORP SANTA MONICA CALIF
P-4458-1
INDUCED FIELDS AND HEATING
WITHIN A CRANIAL STRUCTURE
IRRADIATED BY AN ELECTROMAGNETIC
PLANE WAVE.
AD- 720 589

ROCHESTER UNIV N Y DEPT OF
RADIATION BIOLOGY AND BIOPHYSICS
UR-49-810
BIOLOGIC EFFECTS OF MICROWAVE
AD- 783 772

ROCHESTER UNIV N Y DEPT OF
RADIATION BIOLOGY AND BIOPHYSICS
EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'Vicia faba'.
AD- 781 333

ROCHESTER UNIV N Y SCHOOL OF
MEDICINE AND DENTISTRY
EFFECT OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'Vicia faba'.
AD- 787 387

ROME AIR DEVELOPMENT CENTER GRIFFISS
AFB N Y
RADC-TR-67-461
BIOLOGIC EFFECTS OF MICROWAVE
EXPOSURE.
AD- 824 242

SASKATCHEWAN UNIV SASKATOON DEPT OF
BACTERIOLOGY
ROUND WATER, INOSITOL, AND THE
EFFECT OF X-RAYS ON ESCHERICHIA
COLI.
AD- 618 263

SCHOOL OF AEROSPACE MEDICINE BROOKS
AFB TEX
SAM-59-22
THE RADIOBIOLOGY OF THE CANCER
CELL,
AD- 647 752

SAM-REVIEW-5-74
AIRCREW VULNERABILITY IN
NUCLEAR ENCOUNTERS.
AD- 783 772

SAM-TDR-63-25
APPLICATION OF SEMICONDUCTOR

UNCLASSIFIED

ZOM07

UNCLASSIFIED

AD-416 717

SAM-65-262
PROTON DEPTH-DOSE COSMETRY,
12-6-65

SAM-TR-67-112
USE OF CHROMOSOME ABERRATIONS
TO ESTIMATE X-RAY AND GAMMA-RAY
DOSE TO MAN.
O-333-710

SAH-TR-68-87
EARLY EFFECTS OF 150-MEV PROTON
IRRADIATION IN RHESUS MONKEYS.
O. 681 465

SAM-TR-70-267
RADIOBIOLOGICAL CONCEPTS FOR
MANNED SPACE MISSIONS,
70-714 124

SAM-YR-74-18

SAM-TR-75-28
EFFECT OF 19 MHZ RF RADIATION
ON NEUROTRANSMITTERS IN MOUSE
BRAIN.

BIOLOGICAL STUDIES (OB ISPOLZOVANII
LAZEROV V BIOLOGICHESKIKH
ISSLEDOVANIYAKH).
AD-726 557

SILVER-110M AND CORAL-60 IN
OCEANIC AND COASTAL ORGANISMS,
AD- 619 597

•SHERBROOKE UNIV (QUEBEC) DEPT OF
PATHOLOGY

•SOUTHWEST RESEARCH INST SAN ANTONIO
TEX DEPT OF PHYSICAL AND
BIOLOGICAL SCIENCES

THE EFFECTS OF IONIZING
RADIATION ON OXIDATION STATES OF
BIOLOGICAL SYSTEMS.
AD- 639 192

RADIOBIOLOGY OF LARGE ANIMALS.
AD-AC15 197

AD- 770 131
RADIOBIOLOGY OF LARGE ANIMALS.

60-639758

A STUDY OF BONE CHANGES IN
ALPINO PATS SUBJECTED TO LOW
INTENSITY COBALT-60 GAMMA RADIATION
10- 283 327

•TUFTS UNIV MEDFORD MASS DEPT OF
BIOLOGY

THE ACTION OF MICROWAVE
RADIATION ON THE EYE.
AD-668 419

• UPPSALA UNIV (SWEDEN) • • •

TNM HISTOLOGY OF THE SURGICAL
 RESECTION IN THE HUMAN BLAT. AS
 PRODUCED BY HIGH ENERGY PROTONS
 (AFOSG-348C)
 O-284 931

• UPPSALA UNIV (SWEDEN) GUSTAF WERNER
INST
• • •

USA-YOK

UNCLASSIFIED

THE EFFECT OF COBALT-60 GAMMA
RADIATION ON THE CENTRAL NERVOUS
SYSTEM.
(ADOG(FE)-J-223)
AD- 625 949

LOCALIZED RADIOLESIONS IN THE
CENTRAL NERVOUS SYSTEM.
BIBLIOGRAPHY.
(AFOSR-64-0022)
AD- 646 028

•USAF RADIATION LAB UNIV OF CHICAGO
ILL

•••
INFLUENCE OF X-IRRADIATION ON
DEVELOPMENT OF MICROSOXIDE
AND REDUCTASE ACTIVITY IN THE
LIVERS OF YOUNG MALE RATS.
(SAM-TUR64 29)
AD- 601 792

•WALTER REED ARMY INST OF RESEARCH
WASHINGTON D C

•••
STUDIES ON IRON ABSORPTION.
INTESTINAL REGULATORY MECHANISMS.
AD- 448 438

•••
CLEARANCE OF IRON FROM
HEMOCHROMATOTIC AND NORMAL
TRANSFERRIN IN VIVO.
AD- 455 892

•••
IRON EXCRETION BY THE SKIN.
SELECTIVE LOCALIZATION OF IRON-59
IN EPITHELIAL CELLS.
AD- 455 894

•••
EFFECT OF HEMOLYSIS ON
EXCRETION AND ACCUMULATION OF IRON
IN THE RAT.
AD- 455 900

•••
LONG-LIVED ELECTRON SPIN
RESONANCES IN RATS IRRADIATED AT
ROOM TEMPERATURE.
AD- 616 175

•••
THE ABSORPTION OF NONFERROUS
METALS IN IRON DEFICIENCY.
AD- 627 487

•••
LATE HISTOPATHOLOGICAL CHANGES
IN KIDNEYS OF GRID-IRRADIATED MICE.
AD- 652 941

IN VIVO DOSIMETRY BY ELECTRON
SPIN RESONANCE SPECTROSCOPY.
AD- 672 621

•••
HISTOCHEMICAL INVESTIGATION OF
THE MUCOSA OF THE EXTERIORIZED
SMALL INTESTINE OF THE RAT EXPOSED
TO X-RADIATION.
AD- 689 947

•••
EFFECT OF COBALT UPON IRON
ABSORPTION (34873).
AD- 714 326

•••
FERRITIN PRODUCTION IN THE RAT
SMALL INTESTINE.
AD- 715 541

•••
BIOLOGICAL EFFECTS OF
ELECTROMAGNETIC RADIATION - A
BIBLIOGRAPHY.
AD- 887 119

•WALTER REED ARMY MEDICAL CENTER
WASHINGTON D C

•••
RADIATION-INDUCED PREMATURE
AGING IN LEAVES AND AUTUMNAL EVENTS
IN NATURE.
AD- 627 292

•WASHINGTON UNIV SEATTLE
BIOELECTROMAGNETICS RESEARCH LAB

•••
SCIENTIFIC-6
THE EFFECTS OF ELECTROMAGNETIC
FIELDS ON THE NERVOUS SYSTEM.
AD-AD22 462

•WISCONSIN UNIV-PARKSIDE KENOSHA DIV
OF SCIENCE

•••
EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTROMAGNETIC FIELDS ON
GROWTH AND DIFFERENTIATION OF
•PHYSARUM POLYCEPHALUM.
AD-AD10 167

•YOKOHAMA MUNICIPAL UNIV (JAPAN)
FACULTY OF MEDICINE

0-11
UNCLASSIFIED ZOM07

UNCLASSIFIED

SUBJECT INDEX

- ABSORPTION73
IRON
STUDIES ON IRON ABSORPTION.
INTESTINAL REGULATORY MECHANISMS.●
AD- 448 438
- ABSORPTION(BIOLOGICAL)
METALS
REPRINT: ABSORPTION OF
NONFERROUS METALS IN IRON
DEFICIENCY.
AD- 627 287
- ACCUMULATION
REPRINT: CONTRIBUTIONS FROM THE
ALPHA EMITTER, POLONIUM-210, TO THE
NATURAL RADIATION ENVIRONMENT OF
THE MARINE ORGANISMS.
AD- 770 926
- ADENOSINE PHOSPHATES
RADIOBIOLOGY
TRANSLATION OF RUSSIAN RESEARCH:
EFFECT OF ADENOSINETRIPHOSPHORIC
ACID (ATP) ON THE METABOLISM OF
PHOSPHOPROTEINES IN THE LIVER AT
RADIATION INFLECTION.
AD- 614 962
- AEROSPACE MEDICINE
BIOPHYSICAL PROBLEMS IN
AEROSPACE MEDICINE -- TRANSLATION.
AD-A035 844
- HEALTH PHYSICS
SPECIAL BIOPHYSICAL PROBLEMS IN
AEROSPACE MEDICINE. PART III.●
AD- 744 594
- RADIOBIOLOGY
BIOLOGICAL ACTION OF HIGH-ENERGY
PROTONS, VOLUME 2--TRANSLATION.
AD- 685 486
- AGING(PHYSIOLOGY)
RADIATION EFFECTS
REPRINT: RADIATION-INDUCED
PREMATURE AGING IN LEAVES AND
AUTUMNAL EVENTS IN NATURE.
AD- 627 292
- ANEMIAS
THORIUM COMPOUNDS
USAFSAM WHOLE BODY COUNTER
SYSTEM RADIOCHEMICAL DETERMINATION
OF THORIUM DIOXIDE.●
AD- 764 741
- ANIMALS
RADIATION EFFECTS
TRANSLATION OF RUSSIAN RESEARCH:
EFFECT OF IONIZING RADIATION ON
ANIMALS AND PLANTS.
AD- 624 934
- ANTIGEN ANTIBODY REACTIONS
WHOLE BODY IRRADIATION
ANTIBODY PLAQUE-FORMING CELLS IN
UNSENSITIZED MICE: SPECIFICITY AND
RESPONSE TO NEONATAL THYMECTOMY, Y
IRRADIATION AND PHA.●
AD- 653 864
- AQUATIC ANIMALS
RADIOBIOLOGY
REPRINT: SILVER-110M AND COBALT-
60 IN OCEANIC AND COASTAL
ORGANISMS.
AD- 619 597
- AVIATION MEDICINE
HEALTH PHYSICS
SPECIAL BIOPHYSICAL PROBLEMS IN
AEROSPACE MEDICINE. PART III.●
AD- 744 594
- BEEF
PEPTIDE HYDROLASES
EFFECTS OF RADIO-FREQUENCY
IRRADIATION ON THE ENZYMES OF BEEF
MUSCLE TISSUE.●
AD- 643 434
- BEHAVIOR
THE EFFECTS OF HIGH POWER PULSED
AND LOW LEVEL CW MICROWAVE
RADIATION ON AN OPPRANT BEHAVIOR IN
RATS.●
AD-A004 943
AN EVALUATION OF POSSIBLE
EFFECTS OF 45 HZ, 60 HZ AND 75 HZ
ELECTRIC FIELDS ON NEUROPHYSIOLOGY
- AND BEHAVIOR OF MONKEYS. PHASE I:
CONTINUOUS WAVE.●
AD-A008 404
- BIBLIOGRAPHIES
BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA ('EFFECTS')
AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-
FREQUENCY RADIATION. SUPPLEMENT
NUMBER 4.●
AD- 770 621
- BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA ('EFFECTS') AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 5.●
AD- 784 007
- BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA ('EFFECTS') AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 6.●
AD-A015 622
- RADIOBIOLOGY
BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA ('EFFECTS')
AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-
FREQUENCY RADIATION.●
AD- 750 271
- BIOLOGICAL EFFECTS OF
ELECTROMAGNETIC RADIATION - A
BIBLIOGRAPHY.●
AD- 887 119
- BIOASSAY
RADIOBIOLOGY
REPRINT: 'SANDWICH' SOLID PHASE
RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN
IMMUNOGLOBULINS.
AD- 695 507
- BLOOD PLASMA
FATTY ACIDS
CLEARING FACTOR LIPIASE AND THE
IRRADIATION SYNDROME.●
AD- 449 439

D-1

UNCLASSIFIED

ZOM07

UNCLASSIFIED

RADIATION EFFECTS

AD- 721 699

REPRINT: SYNERGISM OF THYMUS
AND BONE MARROW IN THE PRODUCTION
OF GRAFT-VERSUS-HOST SPLENOEGALY
IN X-IRRADIATED HOSTS.
AD- 713 321

EFFECTS OF 30RDAY OF CO-60 GAMMA RADIATION ON BODY WEIGHT, SKELETAL GROWTH, RATE OF FRACTURE HEALING AND BONE STRENGTH: QUANTITATIVE FLUOROGRAPHY TECHNIQUES FOR MEASURING BONE DETEIORATION, VITAMIN A DEFICIENCY IN RATS

RADIATION EFFECTS

AD- 618 175

AD- 623 641

HISTOLOGICAL DESCRIPTION OF RADICLESION CAUSED BY HIGH ENERGY PROTON BEAM DIRECTED ON MID- BRAIN.

DESTRUCTION OF THE RETICULAR STRUCTURE IN THE BRAIN, AND ITS EFFECT ON BIOELECTRICAL REACTIONS OF THE CORTEX IN ACUTE RADIATION SICKNESS.

ACETYLCHOLINE METABOLISM IN THE
THALAMIC REGION OF BRAINS OF DOGS
WITH RADIATION SICKNESS.
IMMUNOLOGICAL INVESTIGATIONS
IN THE PATHOGENESIS OF RADIATION

AD- 294 513

103333

10-0018 757

**ELECTROMAGNETIC FIELDS
INDUCED FIELDS AND HEATING
WITHIN A CRANIAL STRUCTURE
IRRADIATED BY AN ELECTROMAGNETIC**

CANCER
LUNG

AD- 671 054

THE RADIOBIOLOGY OF THE CANCER CELL.

•CARBON DIOXIDE LASERS
OCULAR AND SKIN HAZARDS FROM CO₂
LASER RADIATION, •
AD-785 609

AND IOWA
BACTERIA

52

CELL
RADIATION EFFECTS
REPRINT: EFFECT OF DAMAGE ON
CELL CONDUCTIVITY IN ELECTRONIC
CELL SIZED DISTRIBUTION.

CELLS (BIOLOGY)
DEOXYRIBONUCLEIC ACIDS
PENETRATION; FATE AND BIOLOGICAL

AD-762 202
TISSES.

PENETRATION AND FATE OF
 EXOGENOUS DNA IN CELLS OF NORMAL
 AND IRRADIATED MAMMALIAN TISSUES. •
 D- 732 874

SEMINAR ON CELL AND CELL SYSTEM
ECOLOGY, HELD IN PARIS, (FRANCE),
13-15 JUNE 1969, •
AD-720 601

AD- 668 686 CELLULAR RESPONSE TO RADIATION.
AD- 715 018 PENETRATION AND FATE OF
EXOGENOUS DNA INTO CELLS OF NORMAL
AND IRRADIATED MAMMALIAN TISSUES.

EFFECTS OF EXPOSURE TO PULSED
MICROWAVES (RADAR) ON CENTRAL
NERVOUS SYSTEM EXCITABILITY IN
LABORATORY ANIMALS.*

EFFECT OF COBALT-60 GAMMA RADIATION ON THE CENTRAL NERVOUS SYSTEM*

RADIATION EFFECTS LOCALIZED RADIOLESIONS IN THE CENTRAL NERVOUS SYSTEM. RADIOTOGRAPHY.

RADIOBIOLOGY
SOVIET RESEARCH ON THE MEDICAL
EFFECTS OF MICROWAVES.*
N - 745 979

CEREBRAL TEMPERATURE CHANGES IN

UNCLASSIFIED

CES-FLF

THE MONKEY (MACACA MULATTA) AFTER
2500 RADS IONIZING RADIATION.*
AD-4004 654

•CESIUM
RADIOACTIVE ISOTOPES
CHANGES IN CESIUM 137 RETENTION
AND ROUTES OF ELIMINATION AS
EFFECTED BY EXTERNAL FACTORS.
AD-464 714

•CESIUM COMPOUNDS
CESIUM-SODIUM ION INTERACTIONS
ON X-RAY DEPOLARIZATION OF ISOLATED
FROG
SARTORIUS MUSCLE
FIBERS.
AD-296 446

•CHROMOSOMES
ANOMALIES
EFFECT OF CHROMOSOME ABERRATIONS TO
ESTIMATE X-RAY AND GAMMA-RAY DOSE
TO MAN.*
AD-666 713

RADIATION EFFECTS
CHROMOSOME ABNORMALITIES IN
LIVER AND MARROW OF MICE IRRADIATED
WITH FAST NEUTRONS, GAMMA AND X
RAYS.
AD-601 115

CLONAL REPOPULATION IN RETICULAR
TISSUES OF X-IRRADIATED MICE:
EFFECT OF DOSE AND OF LIMB-
SHIELDING.*
AD-657 609

AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.*
AD-722 324

•COBALT
IRON
REPRINT: EFFECT OF COBALT UPON
IRON ABSORPTION (134873).
AD-714 326

RADIOBIOLOGY
REPRINT: SILVER-110M AND COBALT-
60 IN OCEANIC AND COASTAL
ORGANISMS.

AD-619 597

•COHERENT RADIATION
RADIOBIOLOGY
EFFECT OF LASER BEAMS ON
BIOLOGICAL OBJECTS--TRANSLATION.
AD-752 699

•COSMIC RAYS
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INVESTIGATIONS ON ARTIFICIAL EARTH
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AD-756 771

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SYMPOSIUM
SEMINAR ON CELL AND CELL SYSTEM
ECOLOGY, HELD IN PARIS, (FRANCE),
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AD-720 601

•DEOXYRIBONUCLEIC ACIDS
CELLS(BIOLOGY)
PENETRATION AND FATE OF
EXOGENOUS DNA INTO CELLS OF NORMAL
AND IRRADIATED MAMMALIAN TISSUES.*
AD-715 018

PENETRATION, FATE AND BIOLOGICAL
EFFECTS OF EXOGENOUS DNA INTO THE
CELLS OF IRRADIATED MAMMALIAN
TISSUES.*
AD-762 202

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CELLS(BIOLOGY)
PENETRATION AND FATE OF
EXOGENOUS DNA IN CELLS OF NORMAL
AND IRRADIATED MAMMALIAN TISSUES.*
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AN ELEMENTAL DIET ON RADIATION
ENTEROPATHY IN THE MOUSE.
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ORGANISMIC RESPONSE TO VERY WEAK

GAMMA RADIATION.
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RADIATION DOSAGE
BIOMETRIC ANALYSIS OF
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•DRUGS
CORRELATION OF ANIMAL, CRYPT,
AND STEM CELL SURVIVAL IN FISSION
NEUTRON IRRADIATED MICE: A
CHEMICAL PROTECTION STUDY.*
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AND ECOLOGICAL RESEARCH SUMMARY
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SEMINAR ON CELL AND CELL SYSTEM
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SANGUINE SYSTEM
BIOLOGICAL/ECOLOGICAL RESEARCH
PROGRAM.*
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AN EVALUATION OF POSSIBLE
EFFECTS OF 45 HZ, 60 HZ AND 75 HZ
ELECTRIC FIELDS ON NEUROPHYSIOLOGY
AND BEHAVIOR OF MONKEYS. PHASE I:
CONTINUOUS WAVE.*
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•ELECTROCARDIOGRAPHY
TELEMETRY SYSTEMS
ELECTROCARDIOGRAPHY IN A
RADIATION ENVIRONMENT BY THE USE OF
TELEMETRY.*
AD-718 315

•ELECTROMAGNETIC FIELDS
EFFECTS OF EXTREMELY LOW

0-3

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FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICIA FARA'.
AD- 781 333
ELF COUPLING TO BIOSPHERES.
AD-AUG 476
THE EFFECTS OF ELECTROMAGNETIC
FIELDS ON THE NERVOUS SYSTEM.
AD-AUG 462
ELF ELECTROMAGNETIC FIELD
EFFECTS ON LIFE FORMS -
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PLANTS(BOTANY)
EFFECT OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICIA FARA'.
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THE BIOLOGICAL ACTION PRODUCED BY
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(EMP) SIMULATOR.
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EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTROMAGNETIC FIELDS ON
GROWTH AND DIFFERENTIATION OF
'PHYSARUM POLYCEPHALUM'.
AD-AUG 187
BIOLOGICAL MEASUREMENTS IN

RODENTS EXPOSED CONTINUOUSLY
THROUGHOUT THEIR ADULT LIFE TO
PULSED ELECTROMAGNETIC RADIATION.
AD-AUG 250
BIOLOGICAL EFFECTS OF NON-
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AD-AUG 315
COMPILATION OF NAVY SPONSORED
ELF BIOMEDICAL AND ECOLOGICAL
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MUSCLE TISSUE.
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ONTOGENY OF THE MOUSE IMMUNE
SYSTEM: IMMUNOGLOBULIN PRODUCING
CELLS.
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EFFECTS OF X-IRRADIATION ON THE
HEPATOBLAST METABOLIZING ENZYME
SYSTEM OF RAT LIVER MICROSOMES.
AD- 637 674
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BIOSYNTHESIS
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HEPATOBLAST METABOLIZING ENZYME

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ACTIVITY OF RAT LIVER ENZYMES
RESPONSIBLE FOR GLYCOGEN METABOLISM
AFTER WHOLE-BODY IRRADIATION..
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EFFECT OF X RAYS AND 60CO GAMMA
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RESPONSIBLE FOR FATTY ACID
SYNTHESIS..
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THE RESPONSE OF ERYTHROPOIETIC
STEM CELLS OF MICE TO IRRADIATION
WITH FISSION NEUTRONS..
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CHROMOSOME ABNORMALITIES IN
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ACTIVITY OF RAT LIVER ENZYMES
RESPONSIBLE FOR GLYCOGEN METABOLISM
AFTER WHOLE-BODY IRRADIATION..
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THE EFFECTS OF LOCAL SUPRALETHAL
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THE EFFECT OF MICROWAVE
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THE EFFECT ON MONOAMINE
METABOLIZING ENZYMES.
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DIFFERENTIAL SENSITIVITY OF
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MONONUCLEAR CELLS OF MICE TO TOTAL-
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THE EFFECT OF X-RAYS ON CELL
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HEMATOPOIETIC CENTERS USING ⁵⁹FE IN
THE PRESENCE OF ⁵¹CR AND ¹²⁵I.

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SOME CONSIDERATIONS CONCERNING
THE USE OF MAGNETRON GENERATORS IN
MICROWAVE BIOLOGICAL RESEARCH.
AD-A013 329

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EFFECTS OF EXPOSURE TO PULSED
MICROWAVES (RADAR) ON CENTRAL
NERVOUS SYSTEM EXCITABILITY IN
LABORATORY ANIMALS.
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RADIATION ON AN OPERANT BEHAVIOR IN
RATS.
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FIELDS ON THE NERVOUS SYSTEM.

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TEMPERATURE OF SQUIRREL MONKEYS
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IRRADIATION.
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FUNCTIONAL STATE OF NERVE.
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THE EFFECT OF MICROWAVE
IRRADIATION ON THE TURNOVER RATE OF
SEROTONIN AND NOREPINEPHRINE AND
THE EFFECT ON MONOAMINE

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BIOLOGICAL EFFECTS OF
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EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTROMAGNETIC FIELDS ON
GROWTH AND DIFFERENTIATION OF
*PHYSARUM POLYCEPHALUM.

AD-A010 187

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RADIATION EFFECTS
ACUTE MORTALITY OF MICE AND RATS
EXPOSED TO MIXED GAMMA-NEUTRON
RADIATIONS OR TO X RAYS.
AD- 478 145

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THE EFFECTS OF X-IRRADIATION OF
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PERMEABILITY TO SODIUM, POTASSIUM
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AD- 296 447

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FROG SARTORIUS MUSCLE
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MEMBRANES AND CELL METABOLISM OF
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PATHOLOGY
REPRINT: INVESTIGATIONS OF THE
PATHOLOGY OF INFECTIOUS DISEASES
AND SUPPLEMENTARY CONSULTATION
SERVICES.
AD- 707 448

UNCLASSIFIED

NEO-PHY

•NEOPLASMS
REPRINT: TUMOR MICROVASCULATURE
FOLLOWING FRACTIONATED X
IRRADIATION.
AD-A013 053

LUNG
URETHAN-INDUCED LUNG TUMORS IN
MICE: X-RADIATION DOSE DEPENDENT
INHIBITION.
AD- 623 079

WHOLE BODY IRRADIATION
THE INFLUENCE OF WHOLE-BODY
EXPOSURE TO X-RAYS OR NEUTRONS ON
THE LIFE SPAN DISTRIBUTION OF
TUMORS AMONG MALE RATS.
AD- 653 063

•NERVE CELLS
RADIOBIOLOGY
TRANSLATION OF RUSSIAN RESEARCH:
CHANGES IN THE TIGROID SUBSTANCE OF
NEURONS UNDER THE EFFECT OF RADIO
WAVES.
AD- 649 460

•NERVES
MICROWAVES
TRANSLATION OF RUSSIAN RESEARCH:
THE EFFECT OF MICROWAVES ON THE
FUNCTIONAL STATE OF NERVE.
AD- 629 865

•NERVOUS SYSTEM
THE EFFECTS OF ELECTROMAGNETIC
FIELDS ON THE NERVOUS SYSTEM.
AD-AU22 462

RADIATION EFFECTS
AROUSAL REACTIONS WITH A BRIEF
PARTIAL-AND WHOLE-BODY X-RAY
EXPOSURE.
AD- 421 070

•NEUROCHEMISTRY
EFFECT OF 19 MHZ RF RADIATION ON
NEUROTRANSMITTERS IN MOUSE BRAIN.
AD-AU16 459

•NEUROLOGY

RADIATION EFFECTS
THE EFFECT OF MICROWAVE
IRRADIATION ON THE TURNOVER RATE OF
SEROTONIN AND NOREPINEPHRINE AND
THE EFFECT ON MONAMINE
METABOLIZING ENZYMES.
AD- 729 161

•NEUROMUSCULAR TRANSMISSION
EFFECT OF 19 MHZ RF RADIATION ON
NEUROTRANSMITTERS IN MOUSE BRAIN.
AD-A016 459

•NEUTRON SCATTERING
RADIOBIOLOGY
EXPERIMENTAL FAST NEUTRON
DOSIMETRY AND LD 50/30 STUDIES IN
MICE.
AD- 639 750

•NEUTRONS
DOSIMETRY
DOSIMETRY FOR NEUTRON RADIATION
STUDIES IN MINIATURE PIGS.
AD- 728 416

RADIOBIOLOGY
NEUTRONS IN RADIOBIOLOGICAL
EXPERIMENTS.
AD- 691 153

•NUCLEAR RADIATION
AIRCRAFT VULNERABILITY IN NUCLEAR
ENCOUNTERS.
AD- 783 772

•OXIDOREDUCTASES
RADIATION EFFECTS
X-RAY IRRADIATION EFFECTS ON
DEVELOPMENT OF MICROSOXIDE
AND REDUCTASE ACTIVITY IN THE
LIVERS OF YOUNG MALE RATS.
AD- 601 792

•PARTIAL BODY IRRADIATION
RESISTANCE(BIOLOGY)
REPRINT: EFFECT OF REGIONAL
SHIELDING AND BACTERIAL
ENDOCARDITIS IN X-IRRADIATED RATS.
AD- 713 354

•PASTEURELLA TULARENSIS
VACCINES
REPRINT: PATHOLOGICAL CHANGES
IN RABBITS INJECTED WITH
PASTEURELLA TULARENSIS KILLED BY
IONIZING RADIATION.
AD- 692 342

•PATTERN RECOGNITION
RADIOBIOLOGY
PATTERN RECOGNITION, SIMULATION,
AND DECISION-MAKING.
AD- 747 539

•PEPTIDE HYDROLASES
RADIOBIOLOGY
EFFECTS OF RADIO-FREQUENCY
IRRADIATION ON THE ENZYMES OF REEF
MUSCLE TISSUE.
AD- 643 434

•PHARMACOLOGY
RADIOBIOLOGY
PHARMACOLOGICAL STUDIES ON
IRRADIATED ANIMALS. PART I. CORP
AND METABOLISM.
AD- 491 993

•PHOSPHOPROTEINS
RADIATION EFFECTS
TRANSLATION OF RUSSIAN RESEARCH:
EFFECT OF ADENOSINETRIPHOSPHATASE
ACID (ATP) ON THE METABOLISM OF
PHOSPHOPROTEINS IN THE LIVER AT
RADIATION INFLECTION.
AD- 614 942

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TRANSLATION OF FOREIGN RESEARCH:
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•PHYSIOLOGY
TRANSLATION OF SOVIET ARTICLES
ON: (1) UKRAINIAN SSR MEDICAL
SCHOOLS, (2) ASSIMILATION OF
RADIOACTIVE PHOSPHORUS, BY SKELETAL
MUSCLES, AND (3) ELECTRONIC
POTENTIOMETERS FOR USE IN

UNCLASSIFIED

20007

UNCLASSIFIED

PLA-RAD

PHYSIOLOGICAL RESEARCH.

AD- 403 741

•PLANTS(BOTANY)

EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICIA FABA'..

AD- 781 333

ELECTROMAGNETIC FIELDS

EFFECT OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICIA FABA'..

AD- 767 387

RADIATION EFFECTS

TRANSLATION OF RUSSIAN RESEARCH:
EFFECT OF IONIZING RADIATION ON
ANIMALS AND PLANTS.

AD- 624 934

REPRINT: RADIATION-INDUCED
PREMATURE AGING IN LEAVES AND
AUTOMNAL EVENTS IN NATURE.

AD- 627 292

•PLASTICS

NEUTRON SCATTERING
EXPERIMENTAL FAST NEUTRON
DOSIMETRY AND LD 50/30 STUDIES IN
MICE..

AD- 639 756

•PLUTONIUM

RADIOBIOLOGY
TRANSLATION OF FOREIGN RESEARCH
ON THE DISTRIBUTION, BIOLOGICAL
EFFECT AND ACCELERATED ELIMINATION
OF PLUTONIUM-239.

AD- 430 440

•PROTONS

HISTOLOGICAL DESCRIPTION OF
RADIOLESION CAUSED BY HIGH ENERGY
PROTON BEAM
DIRECTED ON MID-
BRAIN.

AD- 264 931

RADIOBIOLOGY

THE BIOLOGICAL ACTION OF HIGH
ENERGY FAST NEUTRONS AND PROTONS..

AD- 433 529

REPRINT: PROTON DEPTH-DOSE

DOSIMETRY.

AD- 644 451

REPRINT: ACUTE SOMATIC EFFECTS
IN PRIMATES OF PROTONS TO 400 MEV.

AD- 673 584

BIOLOGICAL ACTION OF HIGH-ENERGY
PROTONS, VOLUME 2--TRANSLATION.

AD- 665 486

•PROTOZOA

RADIOBIOLOGY

REPRINT: ORIENTATION OF EUGLENA
BY RADIO-FREQUENCY FIELDS.

AD- 649 810

•PYRIMIDINES

METABOLISM
EARLY INCREASE IN THE MISCIBLE
DEOXYCYTIDINE POOL IN RATS AFTER X
IRRADIATION..

AD- 680 611

•QUANTITATIVE ANALYSIS

GAMMA GLOBULIN
REPRINT: 'SANDWICH' SOLID PHASE
RADIOIMMUNOASSAY FOR THE
QUANTITATIVE DETERMINATION OF HUMAN
IMMUNOGLOBULINS.

AD- 695 597

•RADIATION

TRANSLATION OF FOREIGN RESEARCH:
RADIATION INJURY MECHANISM IN MOUSE
OVARIES: ELECTRICAL STIMULATION OF
THE HEART BY RADIOFREQUENCY IMPULSE
TRANSMISSION.

AD- 402 519

TRANSLATION OF SOVIET RESEARCH
ON (1) TREATMENT OF THYROID GLAND
DISEASES WITH RADIOACTIVE IODINE,
(2) PERIPHERAL BLOOD CHANGES DURING
RADIATION THERAPY, (3) BLOOD AND
BONE MARROW EVALUATION DURING X-RAY
IRRADIATION, (4) TRANSPLANTATION OF
SPLEEN AS TREATMENT FOR RADIATION
SICKNESS AND (5) RADIOPROTECTIVE
DRUGS.

AD- 405 421

HEART

TRANSLATION OF RUSSIAN RESEARCH:
EFFECT OF IONIZING RADIATION ON THE
HEART: REACTION OF THE HEART IN
NORMAL CONDITIONS TO RADIATION.

AD- 627 049

•RADIATION DOSAGE

RESEARCH STUDY WAS MADE TO
DEFINE PHYSICAL DOSE
DISTRIBUTION UNDER BOTH A UNIFORM
AND A HIGHLY NON-UNIFORM
CONDITION AND TO OBSERVE AND
CORRELATE THE FINDINGS WITH
PHYSICAL DOSE MEASUREMENT.

AD- 400 635

GENETICS

CHROMOSOME ABNORMALITIES IN
LIVER AND MARROW OF MICE IRRADIATED
WITH FAST NEUTRONS, GAMMA AND X
RAYS.

AD- 601 115

LETHAL DOSAGE

BIOLOGICAL ANALYSIS OF
BIOMEDICAL RESPONSE DATA..

AD- 751 504

NEOPLASMS

URETHAN-INDUCED LUNG TUMORS IN
MICE: X-RADIATION DOSE DEPENDENT
INHIBITION.

AD- 623 079

RADIOTHERAPY

THE DISTRIBUTION OF DOSE IN TIME
DURING RADIATION THERAPY OF
MALIGNANT TUMORS--TRANSLATION.

AD- 749 743

SPACE FLIGHT

REPRINT: RADIOBIOLOGICAL
CONCEPTS FOR MANNED SPACE MISSIONS.

AD- 714 124

WHOLE BODY IRRADIATION

REPRINT: CHANGES IN ACUTE
RADIATION HAZARDS ASSOCIATED WITH
CHANGES IN EXPOSURE GEOMETRY.

AD- 708 812

UNCLASSIFIED

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*RADIATION EFFECTS

PULSED IRRADIATION TECHNIQUES (SINGLE-PULSED, MULTI-PULSED, ULTRA-PULSED) AS A NEW APPROACH TO RADIOBIOLOGICAL PROBLEMS.

AD- 265 378

EFFECTS OF 50 R/DAY OF CO-60 GAMMA RADIATION ON BODY HEIGHT, SKELETAL GROWTH, RATE OF FRACTURE HEALING AND BONE STRENGTH. QUANTITATIVE MICRO RADIOGRAPHY TECHNIQUES FOR MEASURING BONE DETERIORATION. VITAMIN A DEFICIENCY IN RATS.

AD- 283 327

TRANSLATION OF SELECTED USMC ARTICLES ON RADIOBIOLOGY: CHEMICAL EFFECT OF RADIATION; RADIATION EFFECT ON CELLS AND THE WHOLE ORGANISM; CHEMICAL PROTECTION AND TREATMENT.

AD- 295 807

THE EFFECTS OF X-IRRADIATION OF FROG SARTORIUS MUSCLE ON MEMBRANE POTENTIAL AND PERMEABILITY TO SODIUM, POTASSIUM AND CALCIUM IONS.

AD- 296 447

CESIUM-SODIUM ION INTERACTIONS ON X-RAY DEPOLARIZATION OF ISOLATED FROG SARTORIUS MUSCLE FIBERS.

AD- 296 448

THE EFFECT OF X-RAYS ON CELL MEMBRANES AND CELL METABOLISM OF FROG MUSCLES.

AD- 296 449

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA ("EFFECTS") AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 4..

AD- 296 450

EFFECTS OF EXTREMELY LOW FREQUENCY ELECTRIC AND MAGNETIC FIELDS ON ROOTS OF "VICIA FABA".

AD- 296 451

PROTECTIVE EFFECT OF AN ELEMENTAL DIET ON RADIATION ENTEROPATHY IN THE MOUSE.

AD- 782 595

AIRCREW VULNERABILITY IN NUCLEAR ENCOUNTERS..

AD- 783 772

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA (EFFECTS) AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 5..

AD- 784 007

OCULAR AND SKIN HAZARDS FROM CO2 LASER RADIATION..

AD- 785 609

EFFECTS OF EXPOSURE TO PULSED MICROWAVES (RADAR) ON CENTRAL NERVOUS SYSTEM EXCITABILITY IN LABORATORY ANIMALS..

AD- 786 753

PROCEEDINGS OF THE SCIENTIFIC-TECHNICAL CONFERENCE ON THE USE OF IONIZING RADIATION IN THE NATIONAL ECONOMY. ISSUE 1--TRANSLATION.

AD- 786 807

HYGIENIC EVALUATION OF FOOD RATIONS WITH PREDOMINANCE OF VEGETABLE PRODUCTS SUBJECTED TO GAMMA-IRRADIATION--TRANSLATION.

AD- 786 808

THE EFFECTS OF LOCAL SUPRALETHAL IRRADIATION ON RENAL FUNCTION..

AD- 786 809

EFFECTS OF MICROWAVE IRRADIATION ON EMBRYONIC BRAIN TISSUE..

AD- 786 810

CEREBRAL TEMPERATURE CHANGES IN THE MONKEY (MACACA MULATTA) AFTER 2500 RADS IONIZING RADIATION..

AD- 786 811

THE EFFECTS OF HIGH POWER PULSED AND LOW LEVEL CW MICROWAVE RADIATION ON AN OPERANT BEHAVIOR IN RATS..

AD- 786 812

THE EFFECT OF EXTREMELY LOW FREQUENCY RADIATION ON HUMAN PERFORMANCE: A PRELIMINARY STUDY..

AD- 786 813

FLU COUPLING TO BIOSPHERES.. AN EVALUATION OF POSSIBLE EFFECTS OF 45 HZ, 60 HZ AND 75 HZ

ELECTRIC FIELDS ON NEUROPHYSIOLOGY AND BEHAVIOR OF MONKEYS. PHASE 1: CONTINUOUS WAVE..

AD- 786 814

EFFECTS OF EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELDS ON GROWTH AND DIFFERENTIATION OF PHYSARIUM POLYCEPHALUM..

AD- 786 815

PRIMATE PHYSICAL ACTIVITY

FOLLOWING EXPOSURE TO A SINGLE 2000-RAD PULSED DOSE OF MIXED GAMMA-NEUTRON RADIATION..

AD- 786 816

POSTIRRADIATION VOMITING..

AD- 786 817

THE CALCULATION OF ABSORBED DOSE AND TISSUE TRANSMISSION FACTORS..

AD- 786 818

BIOLOGICAL MEASUREMENTS IN RODENTS EXPOSED CONTINUOUSLY THROUGHOUT THEIR ADULT LIFE TO PULSED ELECTROMAGNETIC RADIATION..

AD- 786 819

BIOLOGICAL EFFECTS OF NON-IONIZING RADIATION..

AD- 786 820

RADIOBIOLOGY OF LARGE ANIMALS..

AD- 786 821

EFFECT OF 19 MHZ RF RADIATION ON NEUROTRANSMITTERS IN MOUSE BRAIN..

AD- 786 822

SELF ELECTROMAGNETIC FIELD

EFFECTS ON LIFE FORMS -

BIRLINGRAPHY..

AD- 786 823

OPERANT BEHAVIOR AND COLONIC

TEMPERATURE OF SQUIRREL MONKEYS (SALICITRISCIUREUS) DURING MICROWAVE IRRADIATION..

AD- 786 824

ANTIGEN ANTIBODY REACTIONS

HUMORAL ANTIBODY RESPONSES IN NEWBORN MONKEYS AFTER MIXED GAMMA-NEUTRON IRRADIATION..

AD- 786 825

BLOOD PLASMA CLIPPING FACTOR LIPASE AND THE IRRADIATION SYNDROME..

RAD-RAD

UNCLASSIFIED

AD- 449 639
BONE MARROW
SERIAL RIB MARROW ASPIRATION
TECHNIQUE AND MYELOGRAM FOR ADULT
BEAGLES.
AD- 721 699

BONES
ANALYSIS OF LOCAL AND SYSTEMIC
EFFECTS OF IONIZING RADIATION ON
BONE GROWTH.
AD- 623 641

CELLS (BIOLOGY)
TRANSLATION OF RUSSIAN RESEARCH:
PRIMARY AND INITIAL PROCESSES IN
THE BIOLOGICAL EFFECTS OF RADIATION
(SELECTED ARTICLES).
AD- 611 045

CENTRAL NERVOUS SYSTEM
EFFECT OF COBALT-60 GAMMA
RADIATION ON THE CENTRAL NERVOUS
SYSTEM.
AD- 625 949

CHROMOSOMES
CHROMOSOME ABNORMALITIES IN
LIVER AND MARROW OF MICE IRRADIATED
WITH FAST NEUTRONS, GAMMA AND X
RAYS.
AD- 601 115

CLONAL REPOPULATION IN RETICULAR
TISSUES OF X-IRRADIATED MICE:
EFFECT OF DOSE AND OF LIMB-
SHIELDING.
AD- 657 609

DOSE RATE
REDUCTION OF BIOLOGICAL
EFFECTIVENESS OF X-RAYS AT VERY
HIGH DOSE RATES.
AD- 713 557

RELATIVE BIOLOGICAL
EFFECTIVENESS OF IRRADIATION--THE
TIME FACTOR IN IRRADIATION.
AD- 714 421

ENZYMES
EFFECTS OF X-IRRADIATION ON THE
BIOLOGICAL OBJECTS--TRANSLATION.
AD- 752 699

LUNG
URETHAN-INDUCED LUNG TUMORS IN
MICE: X-RADIATION DOSE DEPENDENT
INHIBITION.
AD- 623 079

LYMPHOCYTES
REPRINT: EFFECT OF DAMAGE ON
CELL CONDUCTIVITY IN ELECTRONIC
CELL SIZE DISTRIBUTION.
AD- 627 877

DIFFERENTIAL SENSITIVITY OF
CIRCULATING AND PERITONEAL
MONONUCLEAR CELLS OF MICE TO TOTAL-
BODY X IRRADIATION.
AD- 632 282

MITOSIS
AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.
AD- 722 324

MORTALITY RATES
ACUTE MORTALITY OF MICE AND RATS
EXPOSED TO MIXED GAMMA-NEUTRON
RADIATIONS OR TO X RAYS.
AD- 678 365

NEOPLASMS
EARLY ALVEOLAR CELL MITOTIC
ACTIVITY AND PULMONARY TUMOR
INCIDENCE IN URETHAN TREATED X-
IRRADIATED MICE.
AD- 671 054

NERVOUS SYSTEM
AROUSAL REACTIONS WITH A PROFF
PARTIAL-AND WHOLE-BODY X-RAY
EXPOSURE.
AD- 421 070

OXIDOREDUCTASES
X-RAY IRRADIATION EFFECTS ON
DEVELOPMENT OF MICROSOXIDE OXIDASE
AND REDUCTASE ACTIVITY IN THE
LIVERS OF YOUNG MALE RATS.
AD- 401 792

HEXOBARBITAL METABOLIZING ENZYME
SYSTEM OF RAT LIVER MICROSOMES.
AD- 637 574

ACTIVITY OF RAT LIVER ENZYMES
RESPONSIBLE FOR GLYCOGEN METABOLISM
AFTER WHOLE-BODY IRRADIATION.
AD- 705 996

ESCHERICHIA COLI
REPRINT: ROUND WATER, INOSITOL,
AND THE EFFECT OF X-RAYS ON
ESCHERICHIA COLI.
AD- 618 263

HEMOPOIETIC SYSTEM
THE RESPONSE OF ERYTHROPOIETIC
STEM CELLS OF MICE TO IRRADIATION
WITH FISSION NEUTRONS.
AD- 640 316

IMMUNOLOGY
INDUCTION OF HOMOGRAFT TOLERANCE
IN SUBLETHALLY X-IRRADIATED ADULT
MICE.
AD- 419 563

INTESTINES
REPRINT: HISTOCHEMICAL
INVESTIGATION OF THE MUCOSA OF THE
EXTERIORIZED SMALL INTESTINE OF THE
RAT EXPOSED TO X-RADIATION.
AD- 689 947

IN VITRO MOTOR ACTIVITY OF RAT
SMALL INTESTINE FOLLOWING WHOLE-
BODY X IRRADIATION.
AD- 697 662

KIDNEYS
SYSTEMIC FACTOR IN RECOVERY OF
RAT KIDNEY FROM X IRRADIATION:
THYMIDINE-H3 INCORPORATION STUDIES.
AD- 627 569

X-RAY INDUCED GLOMERULOSCLEROSIS
IN RATS: MODIFICATION OF LESION BY
FOOD RESTRICTION, UNINEPHRECTOMY,
AGE.
AD- 629 512

LASERS
EFFECT OF LASER BEAMS ON
BIOLOGICAL OBJECTS--TRANSLATION.
AD- 714 421

0-12

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RAD-RAD

RADIOBIOLOGY
EARLY EFFECTS OF 150-MEV PROTON
IRRADIATION IN RHESUS MONKEYS.*
AD- 681 465

RETINA
FUNCTION OF MAMMALIAN RETINA
DURING X-IRRADIATION.*
AD- 653 848

SEROTONIN
THE EFFECT OF MICROWAVE
IRRADIATION ON THE TURNOVER RATE OF
SEROTONIN AND NOREPINEPHRINE AND
THE EFFECT ON MONOAMINE
METABOLIZING ENZYMES.*
AD- 729 161

*RADIATION HAZARDS
RADIATION HAZARDS.*
AD-AU15 200

DOSE RATE
PROCEEDING OF INVITED PAPERS
SHIELDING AND DOSIMETRY DIVISION
AMERICAN NUCLEAR SOCIETY HELD AT
WASHINGTON, D. C., NOVEMBER 1968.*
AD- 712 532

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INFRARED HEAT LAMPS USED IN
DRYING CHEMICAL SAMPLES, SEPTEMBER-
OCTOBER 1974.*
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BIOLOGIC EFFECTS OF MICROWAVE
EXPOSURE.*
AD- 624 242

SPACE FLIGHT
REPRINT: PROTON DEPTH-DOSE
DOSIMETRY.
AD- 644 451

WHOLE BODY IRRADIATION
REPRINT: CHANGES IN ACUTE
RADIATION HAZARDS ASSOCIATED WITH
CHANGES IN EXPOSURE GEOMETRY.
AD- 708 812

*RADIATION INJURIES
HISTOLOGICAL DESCRIPTION OF
RADIOLESION CAUSED BY HIGH ENERGY
PROTON BEAM DIRECTED ON MID-
BRAIN.
AD- 284 931

DESTRUCTION OF THE RETICULAR
STRUCTURE IN THE BRAIN, AND ITS
EFFECT ON RHEO-ELECTRICAL
REACTIONS OF THE CORTEX IN ACUTE
RADIATION SICKNESS.
ACETYLCHOLINE METABOLISM IN THE
THALAMIC REGION OF BRAINS OF DOGS
WITH RADIATION SICKNESS.
IMMUNOLOGICAL INVESTIGATIONS
IN THE PATHOGENESIS OF RADIATION
SICKNESS.
AD- 294 513

TRANSLATION OF SELECTED USSR
ARTICLES ON RADIOBIOLOGY:
CHEMICAL EFFECT OF RADIATION;
RADIATION EFFECT ON CELLS AND
THE WHOLE ORGANISM; CHEMICAL
PROTECTION AND TREATMENT.
AD- 295 807

RADIOBIOLOGY OF LARGE ANIMALS.*
AD- 770 131

EYE
REPRINT: THE ACTION OF
MICROWAVE RADIATION ON THE EYE.
AD- 668 619

IN VIVO ANALYSIS
REPRINT: IN VIVO DOSIMETRY BY
ELECTRON SPIN RESONANCE
SPECTROSCOPY.
AD- 672 621

LUNG
AN ULTRASTRUCTURAL STUDY OF THE
DEVELOPMENT OF RADIATION INJURY IN
THE LUNG.*
AD- 630 870

RECOVERY
ALTERED RECUPERATIVE POTENTIAL
IN PREVIOUSLY IRRADIATED MICE.*
AD- 651 879

*RADIATION MEASURING INSTRUMENTS

THORIUM COMPOUNDS
USAFSAM WHOLE BODY COUNTER
SYSTEM RADIOCHEMICAL DETERMINATION
OF THORIUM DIOXIDE.*
AD- 764 741

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MEANS OF INDIVIDUAL PROTECTION
AND CONTROL OF THE ACTION OF
IONIZING RADIATION--TRANSLATION.
AD-A008 267

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RADIATION EFFECTS
AN EXAMINATION OF REGENERATING
HEPATIC TISSUE FOLLOWING IN VIVO
EXPOSURE TO R. F. RADIATION.*
AD- 722 324

RADIOBIOLOGY
TRANSLATION OF RUSSIAN RESEARCH:
CHANGES IN THE TIGROIN SUBSTANCE OF
NEURONS UNDER THE EFFECT OF RADIO
WAVES.
AD- 649 440

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REPRINT: CONTRIBUTIONS FROM THE
ALPHA EMITTER, POLONIUM-210, TO THE
NATURAL RADIATION ENVIRONMENT OF
THE MARINE ORGANISMS.
AD- 770 926

*RADIOBIOLOGY
APPLICATIONS OF INTERMITTENT
RADIATION THEORY TO CONSTANT DOSE
VARIABLE RADIATION TIME PROBLEMS IN
BIOLOGICAL SYSTEMS.
AD- 069 743
A HIGH LEVEL COBALT 60
IRRADIATION FACILITY FOR
RADIOBIOLOGICAL RESEARCH.

AD- 149 023
PULSED IRRADIATION TECHNIQUES
(SINGLE-PULSED, MULTI-PULSED, ULTRA-
PULSED) AS A NEW APPROACH TO
RADIOBIOLOGICAL PROBLEMS.
AD- 265 378
THE SEROLOGICAL SPECIFICITY OF
RADIATION ALTERED HUMAN SPERM GAMMA
GLOBULIN.*

UNCLASSIFIED

RAD-RAD

AD- 275 973
EFFECTS OF 50 R/DAY OF CO-60
GAMMA RADIATION ON BODY WEIGHT
SKELETAL GROWTH, RATE OF
FRACTURE HEALING AND BONE
STRENGTH, QUANTITATIVE
MICRORADIOGRAPHY TECHNIQUES FOR
MEASURING BONE DETERIORATION,
VITAMIN A DEFICIENCY IN RATS.
AD- 283 327
HISTOLOGICAL DESCRIPTION OF
RADIATION CAUSED BY HIGH ENERGY
PROTON BEAM DIRECTED ON MID-
BRAIN.
AD- 284 931
RADIATION EFFECTS UPON TEETH ARE
DEPENDENT UPON EXPOSURE FACTORS AND
THE STAGE OF TOOTH DEVELOPMENT AT
THE TIME OF IRRADIATION. DIRECT
RADIATION INJURY TO TEETH
INTERFERES WITH MITOSIS OF
PROLIFERATIVE TISSUE AND IMPAIRS
METABOLIC PROCESSES IN THE
DIFFERENTIATING CELLS.
AD- 285 094
DESTRUCTION OF THE RETICULAR
STRUCTURE IN THE BRAIN, AND ITS
EFFECT ON BIOELECTRICAL
REACTIONS OF THE CORTEX IN ACUTE
RADIATION SICKNESS.
THALAMIC REGION OF BRAINS OF DOGS
WITH RADIATION SICKNESS.
IMMUNOLOGICAL INVESTIGATIONS
IN THE PATHOGENESIS OF RADIATION
SICKNESS.
AD- 294 513
TRANSLATION OF SELECTED USSR
ARTICLES ON RADIOBIOLOGY:
CHEMICAL EFFECT OF RADIATION;
RADIATION EFFECT ON CELLS
THE WHOLE ORGANISM; CHEMICAL
PROTECTION AND TREATMENT.
AD- 295 807
THE EFFECTS OF X-IRRADIATION OF
FROG SARTORIUS MUSCLE ON
MEMBRANE POTENTIAL AND
PERMEABILITY TO SODIUM, POTASSIUM
AND CALCIUM IONS.
AD- 296 447
CESIUM-SODIUM ION INTERACTIONS

ON X-RAY DEPOLARIZATION OF ISOLATED
FROG SARTORIUS MUSCLE
FIBERS.
AD- 296 448
THE EFFECT OF X-RAYS ON CELL
MEMBRANES AND CELL METABOLISM OF
FROG MUSCLES.
AD- 296 449
BIOCHEMICAL MECHANISMS OF
RADIATION SICKNESS (AND) THE
PROBLEM OF SCIENTIFICALLY
SUBSTANTIATING THE DEGREE OF
EPIDEMIOLOGICAL EFFECTIVENESS OF
VARIOUS VACCINES.
AD- 298 314
CHARACTERISTICS OF PHYSIOLOGICAL
AND BIOCHEMICAL SHIFTS ASSOCIATED
WITH THE PROTRACTED ACTION OF SMALL
DOSES OF CO60 GAMMA-RAYS ON
ORGANISMS.
AD- 299 499
IMMUNOLOGICAL PROPERTIES OF
DENATURATED SERUM PROTEINS IN
RABBITS SUBJECTED TO IONIZING
RADIATION.
AD- 299 522
CHAIN REACTIONS IN THE DAMAGE OF
CELLS BY IONIZING RADIATION.
AD- 299 598
INFLUENCE OF X-RAY IRRADIATION
ON THE METABOLISM OF LIPIDES IN THE
LIVER OF A DOG.
AD- 299 746
TRANSLATION OF FOREIGN RESEARCH:
TRAINING OF MEDICAL RADIOLOGY
PERSONNEL.
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THE EFFECT OF CENTIMETER BAND
RADIO WAVES ON THE ABSORPTION OF
AMINO ACIDS, CHLORIDES AND WATER IN
THE STOMACH AND INTESTINES.
AD- 400 580
RESEARCH STUDY WAS MADE TO

DEFINE PHYSICAL DOSE
DISTRIBUTION UNDER BOTH A UNIFORM
AND A HIGHLY NON-UNIFORM
CONDITION AND TO OBSERVE AND
CORRELATE THE FINDINGS WITH
PHYSICAL DOSE MEASUREMENT.
AD- 400 635
RESEARCH ON MOTOR RESPONSES IN
MOTHS TO LOW INTENSITY X-RAY
EXPOSURE. BURST OF X-RAYS ELICITED
FLIGHT ACTIVITY IN MOTHS WHEN PLACED
IN A DARKENED X-RAY
EXPOSURE ROOM. WING BEAT ACTIVITY
RECORDED AS AN INDEX OF THIS
BEHAVIOR.
AD- 401 027
TRANSLATION OF FOREIGN RESEARCH:
RADIATION INJURY MECHANISM IN MOUSE
OVARIES: ELECTRICAL STIMULATION OF
THE HEART BY RADIOFREQUENCY IMPULSE
TRANSMISSION.
AD- 402 519
TRANSLATION OF SOVIET RESEARCH
ON (1) TREATMENT OF THYROID GLAND
DISEASES WITH RADIOACTIVE IODINE,
(2) PERIPHERAL BLOOD CHANGES AND
RADIATION THERAPY, (3) BLOOD AND
BONE MARROW EVALUATION DURING X-RAY
IRRADIATION, (4) TRANSPLANTATION OF
SPLEEN AS TREATMENT FOR RADIATION
SICKNESS AND (5) RADIOPROTECTIVE
DRUGS.
AD- 405 421
RADIOBIOLOGY OF LARGE ANIMALS.
AD- 770 131
RADIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA (EFFECTS)
AND CLINICAL MANIFESTATIONS
ATTRIBUTED TO MICROWAVE AND RADIO-
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EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTRIC AND MAGNETIC
FIELDS ON ROOTS OF 'VICIA FARA'..
AD- 761 333
REPRINT: PROTECTIVE EFFECT OF
AN ELEMENTAL DIET ON RADIATION
ENTEROPATHY IN THE MOUSE.
AD- 762 595
AIRCRAFT VULNERABILITY IN NUCLEAR
ENCOUNTERS..
AD- 763 772
REPORT ON THE INTERNATIONAL
SEMINAR ON RADIATION PROTECTION,
ENVIRONMENT AND POPULATION (LIST)
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BIOLOGICAL PHENOMENA (EFFECTS) AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 5..
AD- 764 007
EFFECTS OF EXPOSURE TO PULSED
MICROWAVES (RADAR) ON CENTRAL
NEUROUS SYSTEM EXCITABILITY IN
LABORATORY ANIMALS..
AD- 766 753
PROCEEDINGS OF THE SCIENTIFIC-
TECHNICAL CONFERENCE ON THE USE OF
IONIZING RADIATION IN THE NATIONAL
ECONOMY. ISSUE 3--TRANSLATION.
AD- 766 807
HYGIENIC EVALUATION OF FOOD
RATIONS WITH PREDOMINANCE OF
VEGETABLE PRODUCTS SUBJECTED TO
GAMMA-IRRADIATION--TRANSLATION.
AD-AD00 204
EFFECTS OF MICROWAVES: LOCAL
'HOT SPOT' HEATING BY MICROWAVES..
AD-AD01 558
EFFECTS OF MICROWAVE IRRADIATION
ON EMBRYONIC BRAIN TISSUE..
AD-AD04 024
CEREBRAL TEMPERATURE CHANGES IN
THE MONKEY (MACACA MULATTA) AFTER
2500 MADS IONIZING RADIATION..
AD-AD04 854
THE EFFECTS OF HIGH POWER PULSED
AND LOW LEVEL CM MICROWAVE

RADIATION ON AN OPERANT BEHAVIOR IN
RATS..
AD-AD04 943
THE EFFECT OF EXTREMELY LOW
FREQUENCY RADIATION ON HUMAN
PERFORMANCE: A PRELIMINARY STUDY..
AD-AD05 898
MEANS OF INDIVIDUAL PROTECTION
AND CONTROL OF THE ACTION OF
IONIZING RADIATION--TRANSLATION.
AD-AD08 267
ELF COUPLING TO BIOSPHERES..
AD-AD08 276
AN EVALUATION OF POSSIBLE
EFFECTS OF 45 HZ, 60 HZ AND 75 HZ
ELECTRIC FIELDS ON NEUROPHYSIOLOGY
AND BEHAVIOR OF MONKEYS. PHASE I:
CONTINUOUS WAVE..
AD-AD08 404
ANNUAL RESEARCH REPORT 1 JULY
1973 -- 30 JUNE 1974..
AD-AD09 327
EFFECTS OF EXTREMELY LOW
FREQUENCY ELECTROMAGNETIC FIELDS ON
GROWTH AND DIFFERENTIATION OF
'PHYSARUM POLYCEPHALUM'..
AD-AD10 187
PRIMATE PHYSICAL ACTIVITY
FOLLOWING EXPOSURE TO A SINGLE 2000-
RAD PULSED DOSE OF MIXED GAMMA-
NEUTRON RADIATION..
AD-AD11 044
POSTIRRADIATION VOMITING..
AD-AD11 045
THE CALCULATION OF ABSORBED DOSE
AND TISSUE TRANSMISSION FACTORS..
AD-AD12 684
REPRINT: TUMOR MICROVASCULATURE
FOLLOWING FRACTIONATED X
IRRADIATION..
AD-AD13 053
BIOLOGICAL MEASUREMENTS IN
RODENTS EXPOSED CONTINUOUSLY
THROUGHOUT THEIR ADULT LIFE TO
PULSED ELECTROMAGNETIC RADIATION..
AD-AD13 250
BIOLOGICAL EFFECTS OF NON-
IONIZING RADIATION..
AD-AD13 315
SOME CONSIDERATIONS CONCERNING
THE USE OF MAGNETRON GENERATORS IN

MICROWAVE BIOLOGICAL RESEARCH..
AD-AD13 329
COMPILATION OF NAVY SPONSORED
ELF STOMEDICAL AND ECOLOGICAL
RESEARCH REPORTS. VOLUME 1..
AD-AD15 068
COMPILATION OF NAVY SPONSORED
ELF STOMEDICAL AND ECOLOGICAL
RESEARCH REPORTS. VOLUME II..
AD-AD15 069
RADIOBIOLOGY OF LARGE ANIMALS..
AD-AD15 187
RADIATION HAZARDS..
AD-AD15 200
BIBLIOGRAPHY OF REPORTED
BIOLOGICAL PHENOMENA (EFFECTS) AND
CLINICAL MANIFESTATIONS ATTRIBUTED
TO MICROWAVE AND RADIO-FREQUENCY
RADIATION. SUPPLEMENT NUMBER 6..
AD-AD15 622
RADIATION-RELEASED HISTAMINE IN
THE RHESUS MONKEY AS MODIFIED BY
MAY C-FIL DEPLETION AND
ANTIHISTAMINE..
AD-AD16 801
THE EFFECTS OF ELECTROMAGNETIC
FIELDS ON THE NERVOUS SYSTEM..
AD-AD22 462
ELF ELECTROMAGNETIC FIELD
EFFECTS ON LIFE FORMS -
BIBLIOGRAPHY..
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TEMPERATURE OF SQUIRREL MONKEYS
(SALIMY SCIUREUS) DURING MICROWAVE
IRRADIATION..
AD-AD43 706

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ORGANISMS.

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IRRADIATION ON THE ENZYMES OF BEEF
MUSCLE TISSUE.

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AND CLINICAL MANIFESTATIONS

ATTRIBUTED TO MICROWAVE AND RADIO-
FREQUENCY RADIATION.

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IMMUNOGLOBULINS.

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THE RADIOBIOLOGY OF THE CANCER

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ESTIMATE X-RAY AND GAMMA-RAY DOSE
TO MAN.

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PRELIMINARY STUDIES ON THE
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AND ROUTES OF ELIMINATION AS
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THE EFFECTS OF IONIZING

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DEPENDENT UPON EXPOSURE FACTORS AND
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THE TIME OF IRRADIATION. OBJECT
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INTERFERES WITH MITOSIS OF
PROLIFERATIVE TISSUE AND IMPAIRS
METABOLIC PROCESSES IN THE
DIFFERENTIATING CELLS.
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ELECTROCARDIOGRAPHY IN A
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AN EXAMINATION OF REGENERATING
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THE INFLUENCE OF WHOLE-BODY
EXPOSURE TO X-RAYS OR NEUTRONS ON
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EXPOSURE.*
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